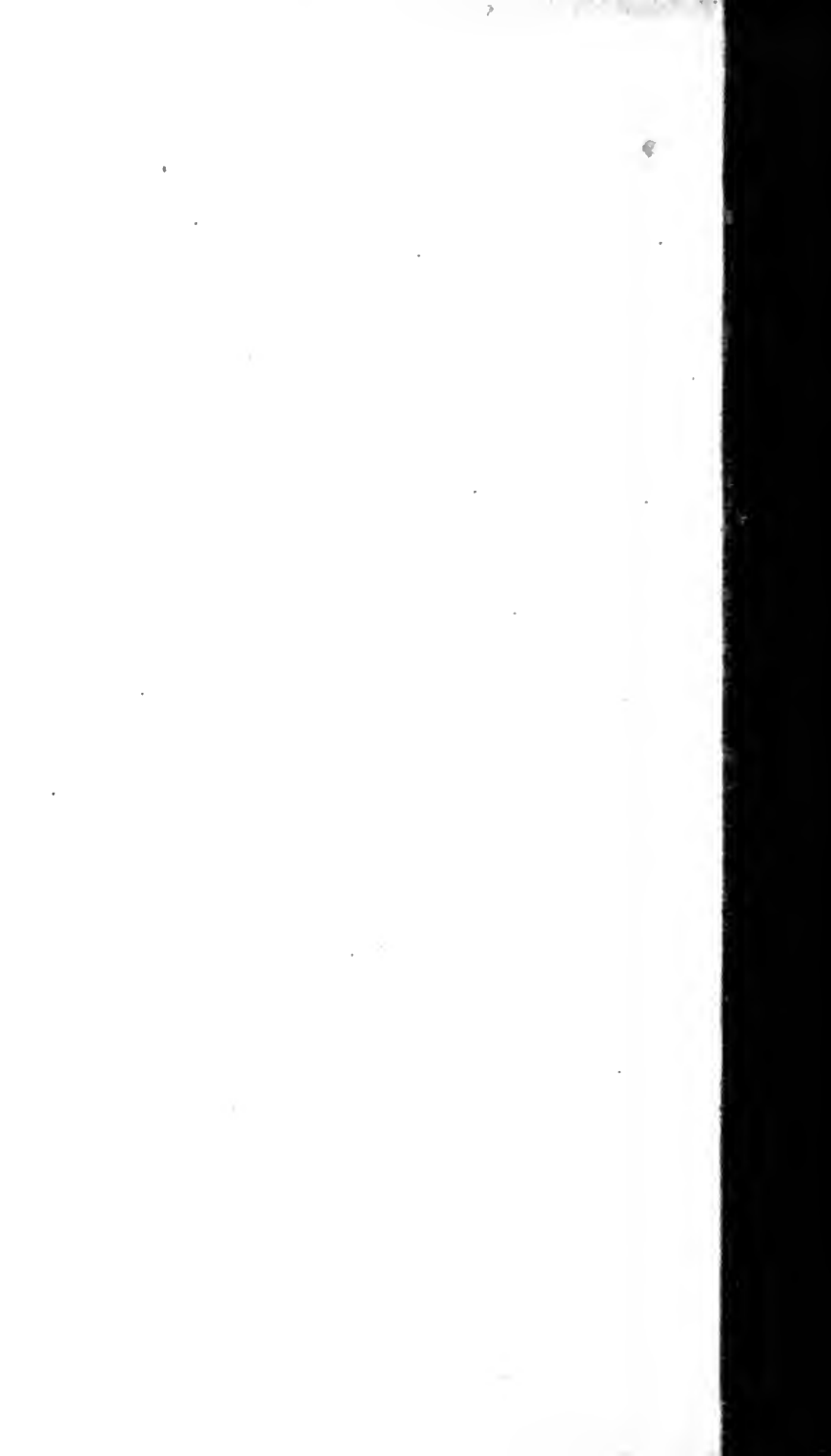


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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Report of Clinical Cases Treated during the Session 1860-61, in the Surgical Wards of the Royal Infirmary, under the care of JAMES SPENCE, Esq., F.R.C.S.E., Lecturer on Clinical Surgery.*

THIS Second Part of my Clinical Report contains Cases of Hernia, Tumours, Diseases of the Genito-Urinary Organs, and a Tabular View of the cases of Disease of Bone and Fractures treated in the Surgical Wards under my charge during the year ending September 1861. I have, however, included three cases of hernia which occurred since then, as they served to complete a group of cases illustrative of important peculiarities met with in this morbid condition. The abstracts of these additional cases are reported by my present resident, Dr King, whilst for the abstracts of the reports of cases during the year I am indebted to my late resident, Dr Broster.

PART SECOND.

SECTION FIFTH.—HERNIA.

1. Mary Stark, æt 43. A femoral hernia first came down ten days previous to admission. Taxis twice applied by her medical attendant; bowels had not been opened up to the date of her admission into hospital, when she was suffering from well-marked symptoms of strangulated femoral hernia. The operation was immediately performed, and the bowel was found perfectly black, with greyish patches, and had a distinctly gangrenous odour. The constriction being divided, the bowel was not returned into the abdominal cavity. An opiate was administered, and a poultice applied to the wound. Ordered calomel and opium pills every fourth hour. Bowels opened next day. Patient died on the third day after admission.

2. Janet Dalziel, æt. 71. Strangulated femoral hernia. Down five days. Sac opened. Bowel returned. Cured.

3. Catherine Reilley, æt. 32. Strangulated femoral hernia. Down thirty-six hours. Sac opened. Bowel returned. Cured.

4. Mrs Notman. Had been troubled with an oblique inguinal hernia for six years, which, however, was always readily reduced, with the exception of a small part which never could be kept up. On the day previous to admission into hospital it had again come down, and she had experienced severe twisting pain in the umbilical region, together with nausea, and vomiting, which, on the following day, became stercoraceous, when she was at once sent to hospital. On examination it was found that, in addition to the hernial protrusion of left side, there existed directly over the crural canal of the right side a hard, isolated, prominent, and well-defined swelling, about the size of a walnut, which patient stated had commenced a year ago and gradually enlarged. The protrusion on the opposite side could be easily returned within the external ring; but doubts being entertained as to its complete reduction, it was cut down upon, and a constriction was found to exist at the upper part of the canal. The bowel was returned, and a distending injection given immediately after the operation, which brought away a large quantity of bilious-looking fæces. Hernial symptoms were now quite relieved; but the patient suffered from severe bronchitis, and for some years past she had been affected with cancer of the os uteri. The hernial wound healed rapidly; but the patient died three months afterwards from the cancer of the womb and bronchitis.

5. Janet Patterson, æt. 40. Strangulated femoral hernia. Down thirty-six hours. Sac opened. Bowel claret-coloured, but not gangrenous. Cured.

6. Catherine Duncan, æt. 34, wife of gardener, Loanhead. Femoral hernia. Admitted 30th September. Hernia frequently down during the fifteen months before admission. For a month before admission almost continuously down. About 7 o'clock on 30th September bowels were moved. At 8 o'clock felt pain in lower part of abdomen. At this time the tumour had increased to the size of a pigeon's egg. She became sick and vomited phlegm. Never felt twisting sensation at umbilicus. She, along with a female friend, persevered for nearly two hours in trying to reduce the swelling. It then became as large as a small hen's egg. At 1 o'clock, Mr Spence tried the taxis. Ordered a distending injection, and cold to be applied to tumour. No fæces came with injection. At 6.30 P.M., Mr Spence operated. The bowel very black, but no gangrenous odour. It was returned, and the wound closed. After the operation, everything proceeded favourably, except that some irritation caused by flatulence existed during the first few days.

Congenital Inguinal Hernia.

7. Charles Mason, æt. 19, was admitted on the 4th October last, labouring under a strangulated congenital hernia. The hernia had come down suddenly that morning; and after its descent he had

suffered from severe pain in the swelling, tenderness of abdomen, and vomiting. Previous to admission, antimonials had been given, and the taxis twice tried under chloroform. On admission, after a distending enema had been administered, and cold applied to the swelling, the patient was put under chloroform, and the operation performed. About a foot of small intestine of a deep chocolate colour was found in the sac, and returned. A large opiate was ordered.

Post-mortem appearances.—About a foot of bowel quite black and suppurating on the serous surface. Submucous tissue highly congested.

Femoral Hernia—Extra-Peritoneal Operation.

8. Helen Steele, æt. 36. On admission stated that she had been afflicted with a hernia for the last ten years, and that she always wore a truss, but neglected on Sunday morning to apply it. About 9 A.M. she suddenly felt a severe pain in the right groin, and found that she was not able to reduce the swelling as she usually could do. A surgeon was called in, whose efforts to reduce it by taxis, without the aid of chloroform, were unavailing. She came to the Infirmary about 7.30 P.M. Mr Spence performed the extra-peritoneal operation, and the patient made a very rapid recovery.

Remarks on the Cases of Hernia.—The group of cases presented in this Report is of very considerable interest, for it furnishes, in small compass, examples of some of the most important conditions met with in strangulated hernia, and the plan of treatment adapted for each.

The first case, that of Mary Stark, is an example of the bad effects of delay, permitting the incarceration to proceed to complete strangulation and gangrene. The case, in fact, had been treated for constipation in the first instance, and active purgatives administered before the hernia was discovered. Then the taxis was tried ineffectually. I was then requested to see the patient, and urged her to have the operation performed; but both she and her friends refused, and another day was lost before she came into hospital. Her condition was then very hopeless; her pulse was weak and intermitting, and she had stercoraceous vomiting and constant hiccup; but as the operation was the only chance for life, I performed it. After the division of the stricture I drew down the gangrenous portion, but did not open it till after some hours, when lymph had become effused; so as to diminish the risk of extravasation of fæces into the abdomen. I then opened it freely, and there were feculent evacuations both by the wound and by the anus. The operation afforded great relief to the general symptoms, the vomiting ceased, and the pulse became firmer for a time; but this reaction soon ceased, and she gradually sank. I believe, from the slow progress of the symptoms, that had this patient been operated on even a few

days earlier, there can be little doubt the result would have been as favourable as in the case of Mrs Dalziel; and I think medical men can hardly be too much impressed with the necessity for careful examination, in all cases of obstinate constipation, lest a hernia be overlooked. The reason I did not at once open the gangrenous part of the intestine arose from having often observed that in cases where this has been done immediately, the patients often sink very rapidly, with great increase of abdominal pain, and I believe this is due to some of the thin feculent matter oozing back through the divided constriction into the abdomen. Freely dividing the constriction, drawing down the gangrenous part, and applying warm water dressing, or a soft poultice, for a few hours before opening the gut, diminish this risk; and I have for some time adopted this in my practice as a general rule.

The cases 2 and 5 were cases in both of which the strangulated intestine had suffered to the extent of threatened gangrene in the protruded knuckle. In the case of Mrs Dalziel, an old woman above 70, the rupture had been down five days, but as the symptoms did not become urgent till thirty hours before admission, she had not applied for medical aid. In Patterson's case the symptoms had proceeded rapidly, and become very urgent in less than thirty hours. In both, the small portion of intestine in the sac was tightly constricted, of a dark claret colour, and mottled with gray spots; but the intestine above the constriction was healthy, and not distended or inflamed. In cases of this kind I adopt the practice, I followed in these cases, viz., of dividing the stricture very freely, gently replacing the intestine within the margin of the ring, but leaving the dark part visible, and the wound open, and merely placing a fold of lint soaked in warm water over the wound, retained by a single turn of a bandage. Thus, if sphacelation or ulceration of the dark portion of the gut does occur, the feces pass out at the wound, and this gradually diminishes, and ultimately the feculent fistula closes completely; whilst in other cases the gut regains its vitality when the stricture has been relieved, and the case, as in the instance of Mrs Dalziel, goes on uninterruptedly to a cure by contraction and granulation. In most cases, if a feculent fistula is to form, it begins to show itself between the sixth and eighth day; but in Patterson, the wound, though carefully watched and dressed, in expectation of a fistula forming, seemed to heal well, though slowly, and after eight weeks she left the hospital wearing a truss. Some weeks afterwards a small abscess formed, and then small quantities of thin feces occasionally passed; but now the fistula is almost entirely healed. I have never seen that condition occur so long after the operation in any other case, and I think it is most likely that the pressure of the truss not carefully applied had caused irritation and abscess under the cicatrix, which may have perforated the adjacent bowel.

Mrs Notman's case (4) is a very instructive one, as exhibiting

the difficulties which often complicate our diagnosis in cases of hernia; and as it was impossible in the abstract of the case to give a full idea of these, I think it well to draw attention to them. The abstract of her case states briefly the facts observed on admission, viz., that along with symptoms of strangulation, there existed in the left inguinal region a cyst-like swelling, globular, and not painful, easily pushed back within the lower part of the canal, but reappearing whenever the pressure was removed. She stated that this swelling was always present, but that sometimes a larger swelling came down; all that could be felt high up in the canal was an undefined hardness near the deep ring. In the right inguino-femoral region there existed a swelling about the size of a walnut, hard, but elastic at the most prominent part, tender to the touch, and occupying exactly the position of a femoral hernia. Looking at these local conditions in conjunction with the symptoms, everything would have favoured the idea that the swelling in the femoral region was most likely to be the seat of strangulation. Fortunately, however, I knew something of her case; for about a year previously she had consulted me about the swelling in the right groin, supposing it was a rupture. The stony hardness of the tumour at that time, and the general cachetic look of the woman, left no doubt on my mind that it was a cancerous gland, probably connected with malignant disease of the uterus; which opinion was confirmed by examination with the speculum, showing decided cancerous affection of the os uteri. Hence, when I now felt the elastic swelling, I at once concluded that the elasticity was due to the progress of softening, and not to any portion of gut protruded behind the swelling. But, on the other hand, there was little doubt in my mind that the round cyst-like swelling did not contain strangulated intestine, for there was no continuous neck to be felt: it was quite defined and globular. The hardness and tenderness at the position of the deep inguinal ring was what appeared to me the suspicious point. I accordingly explained to the students present that I would cut down upon and lay open the inguinal canal, and expose the deep ring, fully in hopes of finding a portion of strangulated intestine there, but that if nothing was found there, then I would (however unwilling) consider it my duty to cut down upon the cancerous mass in the femoral region, in case a small hernia might have descended and be strangulated behind it, as the urgent symptoms were unmistakably those of strangulation. On laying open the left inguinal canal, I found, as I suspected, a very small knuckle of intestine, tightly constricted by the neck of the sac, the constriction appearing to proceed upwards within the deep ring; this was cautiously divided, and the gut gently examined and returned. I now found the globular cyst lying loose in the lower part of the canal, and on tracing the opened sac downwards, I found it had evidently at one time formed a part of it, as, though I could not press out the contents of the cyst, there was a minute opening of communication which

admitted an Anel's probe. I laid the cyst freely open and evacuated its serous contents, and then dressed the patient in the usual manner.

The line of practice followed in this case seems to me the proper treatment under similar circumstances. I think it important always to bear in mind, that although we may from previous knowledge be sure that a tumour (such as that in the right groin in this case) occupying the position of hernia is really glandular or cystic, yet, if at any time symptoms of strangulation occur, we should recollect the possibility of hernial descent taking place behind it, and act accordingly.

The case of the lad Mason is valuable as illustrative of the dangers peculiar to the congenital form of inguinal hernia, and also as it serves to direct attention to some points connected with the treatment resorted to to facilitate reduction by taxis.

First, as regards the peculiar dangers of congenital hernia. Any one who has carefully noticed the results of such cases must have been struck with the greater fatality in them than in other forms of rupture; whilst those who have had much experience in operating can scarcely have failed to be surprised at the amount of morbid action which is often presented in the contents of such a hernia in a very short period of time, compared with what we find even in cases of femoral or umbilical herniae. These results seem to me to depend chiefly of course on the nature of the constriction, but are increased or modified by the extent of the protrusion, and the treatment adopted prior to operation. The very nature of the constriction is essentially dangerous; for if we consider the long narrow canal of communication which exists between the general peritoneal sac and the tunica vaginalis, the process of condensation, elongation, and increased obliquity which it undergoes as the patient advances towards adult age, we will at once perceive how difficult it will be for a hernial protrusion to descend; and having descended into the scrotum, and become distended or congested, how almost impossible to return it by taxis, especially when we further recollect the unyielding texture of the walls of the canal of communication. This resistant, unyielding character is easily seen when the hernia is down, and indeed often forms a cause of doubt as to the scrotal swelling being a hernia, for there is apparently no continuous neck passing towards the abdomen, nothing but what feels like a slightly swollen and hard spermatic cord, so firmly is the gut embraced throughout the whole length of the canal; and then the bowel, emancipated in the cavity of the tunica vaginalis, becomes distended and congested, and tightly nipped above by the sharp resisting margin of the lower opening of the canal. These are what I consider the essential dangers of the congenital rupture. But it is evident that they will be much increased, if, as very often happens, a large portion of gut has suddenly been protruded, in consequence of some violent effort or force. Then, even slight efforts at reduction only make matters

worse; and in such a case I have seen the coils of small intestine highly inflamed, matted together, and at some points gangrenous, even in the course of sixteen hours. Whilst in another I have seen the peritoneal coat of the intestine abraded and cut by the stricture, and the bowel inflamed, in less than six hours from the descent, where the patient had been very restless, and made violent efforts at reduction. On the other hand, if only a small portion of bowel has passed beyond the lower margin of the canal of communication, or where the bowel has been somewhat protected by a portion of omentum, I have found, even at the lapse of thirty hours, not much more alteration than in an ordinary case of hernia. But these latter conditions are rare, and not to be depended on; and hence in this form of hernia there should be no delay, and no prolonged or unnecessary attempts at taxis, and all source of irritation should be avoided. And this leads me to consider the treatment prior to operation. If we reflect on the unyielding nature of the constriction and its fibro-cellular texture, it must be obvious that in cases of congenital hernia, as in femoral and umbilical, therapeutic agents, with the view of relaxing muscular fibres, can be of little use as adjuvant to the taxis, and hence, prolonged use of the warm bath may be dispensed with; whilst the use of tobacco enemata and antimonials are positively dangerous as well as useless. The antimony is especially unsuitable, because the nausea it induces arises from irritation of the intestinal mucous membrane, and its effects do not cease, but keep up irritation and vomiting, even after the reduction by operation; and I may state that, though fortunately rarely administered, I never yet saw a case of hernia recover in which it had been given, either before the operation as a relaxant, or after it to diminish the frequency of the pulse; besides, there is no possible excuse for resorting to such remedies now, as the most complete relaxation can be safely obtained by chloroform. If there be any chance of reducing the bowel by taxis, the remedies most likely to facilitate that result must be of a kind which tend to diminish the bulk of the protruded parts, by relieving congestion, or diminishing the volume of the gaseous contents of the intestine; and with this view I generally apply cold (such as iced water) to the tumour, and administer a large distending enema, so as to empty the lower bowel, and this latter, by exciting slight peristaltic action, may favour the escape of flatus from the incarcerated intestine, if the constriction is not tight. I have seen these means do good in cases of femoral and inguinal, but I must say never in congenital hernia. Above all, I would deprecate violent or long-continued efforts at reduction by taxis, as I believe that, in the state of the parts I have described, such attempts are far more dangerous than the operation. As if to impress on me those dangers, I was called, whilst writing this, to a recent case of congenital rupture brought to me from the country. The tumour was confined to the canal, neither testicle having passed through the external ring;

the swelling was large, tense, and painful, and the patient had attacks of vomiting. All attempts by taxis had failed. My resident surgeon, Dr King, ordered a distending enema, and this brought away such a copious loose stool as to make me doubt the tightness of the constriction; still, as the tumour was tender, I put the patient under chloroform, and finding the hernia did not yield, I cut down upon it, and found a large sac, partly occupying the canal and partly pressing up between the parietes and peritoneum. On drawing it down, to bring its neck within easier reach, I found the sac had rent on its posterior aspect from the attempts at reduction, and on laying it freely open that there was exudation of blood here and there on the surface of the bowel, showing the danger of the taxis in such cases. The practice which I adopt and would recommend is briefly this. Apply cold to the swelling, and administer a large distending enema of salt and warm water, or soap and water; if the patient be young and robust, a bleeding from the arm will do no harm; then, when the enema has acted, and the cold been applied for a short time, put the patient fully under chloroform, and try reduction by taxis; but if the swelling be resistant, do not persist or use strong pressure, but resort at once to operation.

The cases of Reilley, Duncan, and Steele (3, 6, and 8,) were ordinary cases of strangulated femoral hernia, where the strangulation had not existed very long. In the two first, the sac was opened, because from the one hernia having been down thirty-six hours, and the other having been subjected to violent attempts at reduction by the patient and her neighbours, I had doubts as to the state of the contents of the sac. Whilst in the last case, that of Mrs Steele, the hernia being quite recent, no undue violence having been used, and the constriction evidently caused by the textures external to the sac, there was no reason for doing more than dividing these, emptying the sac of its contents, and then invaginating it.

SECTION SIXTH.—TUMOURS.

1. James Cuthbertson, æt. 40. Medullary sarcoma of femur, extending under Poupart's ligament into abdominal cavity, said to have originated two years ago from the kick of a horse. Sent home, as unfit for treatment.

2. Thomas M'Tavish, æt. 34. Two years ago the patient observed a small pimple close to the right nipple; it increased gradually to the size of an orange, when about nine months ago he received a kick from a horse on it, and the tumour then began to enlarge rapidly. "On examination, an ovoid tumour of about the size of a small melon occupies the outer part of the right pectoral region, extending into the axilla. It is of firm consistence, and movable over the thorax; the skin over it is healthy. Another tumour, not quite so defined, is situated above the former, extending to the clavicle. No enlarged

glands in axilla or neck." The large tumour was exposed by means of an elliptical incision, another being carried vertically from the uppermost incision in order to expose the upper tumour; the larger tumour was found developed in the fibres of the great pectoral muscle, which had to be carefully removed. The smaller one extended up into the infra-clavicular space, and during its dissection the axillary vessels were fully exposed. Some branches of the acromial thoracic artery required to be ligatured, as did also some small vessels entering the tumour. Very little hæmorrhage took place, and the patient did well till the second day after the operation, when repeated rigors occurred, and he died on the twelfth day.

3. David Honeyman, æt. 63. Three years ago received a blow on left breast, and soon after observed a soft elastic swelling, which was movable under the skin, and entirely free from pain. It has gradually increased in size, and is now found to occupy the anterior aspect of the thorax, it is quadrilateral in shape, extending from the middle of the sternum to the angles of the ribs on the left side, projecting up into axilla. Very tense, elastic, and at parts distinctly fluctuating, it is now firmly attached to the subjacent textures. The left lung is displaced upwards and backwards, and the breathing is considerably impeded. Nothing done. Patient sent home.

4. Rachel Blossom, æt. 45. Carcinoma of mamma. Enormous enlargement of the organ, with ulceration going on at different points; glands in axilla and neck much affected. Nothing done. Died.

5. Mary Little, æt. 56. Scirrhus mamma. Excised. Cured.

6. Catherine Hay, æt. 50. Scirrhus mamma. Excised. Died.

7. Mrs ——. Scirrhus mamma. Excised. Cured.

Cases of Epithelial Growths.

James Clark, Jan. 19. Lower lip. Excised. Cured Feb. 4.

Janet Pinkerton, April 1. Lip. Excised. Cured April 22.

David Blyth, June 10. Lip. Excised. Cured June 18.

George Cleghorn, Aug. 6. Upper lip and cheek. Excised. Cured Sept. 11.

Walter Lawson, Aug. 13, æt. 65. Lower lip. Diseased parts removed, and new lip formed. Everything progressed favourably, and union had taken place, when erysipelas of face supervened, from the effects of which the patient died.

Remarks on Tumours.—It will be observed from the abstracts of these cases, that the more important tumours were of a kind which, though interesting in a pathological point of view as exhibiting the development and vital manifestations of malignant growths, admitted of little chance of successful operative interference. In the cases of Cuthbertson, Honeyman, and Rachel Blossom, from the condition of the patients, and the connexions and relations of the tumours, all idea of operation was out of the question. In the case

of M'Tavish, although the general appearance of the patient indicated the malignant nature of the growth, yet, as it was tolerably defined, as it had begun to increase rapidly, as no diseased glands were to be felt, and as the patient was a young man, I thought it right to give him the chance which an operation afforded, especially as he was anxious to have it removed.

On exposing the tumour, and finding, as I suspected, that it involved the great pectoral muscle, after dissecting off the skin I divided first its sternal and costal, and then its clavicular attachments, and partly with the knife, partly with the finger, separated the upper tumour from the great axillary vessels. I was careful in this part of the operation, as I knew from experience that there was no trusting to the limitation of such tumours, even by strong fasciæ; and accordingly I found that the coraco-clavicular aponeurosis had been destroyed, so that when the upper tumour was taken out, the great vessels were seen bare as in a dissection, as was the edge of the lesser pectoral. The cephalic vein was so connected with the tumour, that I had to place temporary ligatures on it and divide it between them. I then drew the whole mass downwards and outwards, and divided the brachial attachment of the pectoral close to the bone, and thus removed the whole growth, and the muscle in which it was originally developed. Of course the wound was enormous, but for the first two days everything seemed to promise well, and the incision of the integuments united through a great part of its extent; but then rigors supervened, unhealthy-looking and fetid pus formed and infiltrated the loose textures of the axilla, requiring the incisions to be reopened, and counter-openings to be made; and the patient gradually sank exhausted,—a result scarcely to be wondered at when we consider the cachectic state of the constitution, the extent of the deep dissection, the nature of the neighbouring textures in the axilla, and the difficulty of obtaining a free vent for the discharge, in the position in which the patient necessarily lay. This is only one of many examples of the unsuccessful results of operations for malignant disease in its advanced stage, even when limited locally, and where patients, who have obstinately refused to submit in the early stage, become anxious for its removal at all hazards.

SECTION SEVENTH.—GENITO-URINARY CASES.

Lithotomy.

There were two cases of lithotomy, both boys, one aged 12, the other 6 years; and in both the lateral operation was performed successfully.

Stricture of Urethra, with great Enlargement of the Bladder.

George Henderson, æt. 60, had suffered many years from stricture, and had at one time had an escharotic applied to the seat of

obstruction, shortly after which the symptoms of stricture became much aggravated. He was admitted into the hospital suffering from complete retention, and had a haggard and anxious expression of countenance. The bladder was highly distended, extending up to the umbilicus. A No. $\frac{1}{2}$ catheter was introduced, and a large quantity of fetid, purulent urine drawn off,—the muscular power of the bladder seemed entirely lost. Tepid water was occasionally injected, and decoction of Pareira and Uva-ursi, combined with nitric acid, administered; and by these means the tone of the bladder became restored. The stricture rapidly dilated, and he was dismissed cured.

Stricture from Laceration of Urethra (cured by dilatation).

James Weir, æt. 22, was struck on the hip by a block of coal, whilst working in a pit. Suffered great pain in perinæum; urine was tinged with blood; subsequently, had complete retention of urine at times, and was advised to apply for admission to the hospital. Cured by dilatation.

Stricture of Urethra, with Infiltration of Urine.

William Weber, æt. 38, had suffered for about ten years from difficulty in passing water; on the day of admission he had experienced complete retention, and applied to a medical man, who, he stated, drew off his water. On his admission to the hospital the same evening, the bladder was much distended, and there was complete inability to pass water. The penis was also hard and swollen, and he complained of great pain in it. Urine was drawn off by means of a No. 1 catheter, which was tied in, and an opiate administered. Two days after, a boggy spot on the dorsum of the penis was opened, and pus, having the peculiar odour of urine, escaped. Abscesses subsequently formed in scrotum, and over pubis and abdomen, which were freely opened, and large quantities of pus and urine evacuated. He was ordered large quantities of stimulants, and, gradually recovering, at the end of six weeks was dismissed cured.

Stricture of Urethra, with False Passage leading into Rectum, from use of Caustic Bougies.

Charles M'Ghee, æt. 32, states that he has suffered from stricture of urethra for more than two years, and that he was one day seized with complete retention, when he applied to a medical man, who used the porte-caustique with potassa fusa several times, and passed bougies afterwards. As the difficulty in making water still continued, he applied to Mr Spence, when, on introducing an instrument, a false passage was discovered, leading from urethra into rectum, the point of the catheter being felt on introducing the finger into the gut. Cured by dilatation of the natural passage.

Stricture and Urethrotomy.

1. James Gallacher, æt. 45. Patient was admitted labouring under complete retention of urine, and on examination, there was found to be absolute occlusion of the external urinary meatus, together with a hard swelling in the perinæum. An incision was at once made in the perinæum, opening into the urethra, and free vent was given to the pus and urine. A fortnight afterwards a bougie was passed from the opening in the perinæum through the stricture, anteriorly, which was divided by subcutaneous incision. A bougie was occasionally passed through the anterior stricture; the opening in the perinæum rapidly closed, and the patient was dismissed cured.

2. George Williamson, æt. 34, a painter, whilst following his employment twelve months ago, fell from a ladder, alighting "stride-legs" on the branch of a tree. Abscesses formed in perinæum and scrotum; and as he experienced great difficulty in passing his water, he applied to a medical man, who made incisions into the perinæum and scrotum, since which time the greater part of his urine has come away through the fistulous openings which remained. On admission, abscesses are found to be forming at side of scrotum, which were at once laid open by means of a free incision. A No. 3 catheter was at the same time, after some difficulty, introduced into the bladder. As no benefit was being derived from dilatation, perinæal section was performed, and a No. 9 catheter tied in, and retained for twenty-four hours. Patient made a rapid recovery, a full-sized instrument being occasionally passed, and he was dismissed cured.

Remarks on the Cases of Urethral Stricture.—Besides the cases of stricture of which abstracts have been given, a great many ordinary cases of stricture were treated by dilatation both in the wards and as out-patients, and there were also several cases of prostatic disease, which I have not thought necessary to record specially. Of the cases recorded, the first case, that of Henderson, is a remarkable example of the amount of suffering and inconvenience which patients affected with stricture will endure before applying for advice or treatment; and when we consider the amount of local and constitutional disturbance to which such conditions as were present here must give rise, it is only wonderful that the treatment should afford relief. For years this man had hardly passed water except in drops, and for some weeks, at least, his bladder could never have been emptied, as the enormous distension and the decomposed state of the urine showed, and the bladder had lost all power of contracting, for even when a moderate-sized catheter was introduced, pressure on the abdomen was required to propel the urine through the instrument in a stream. The irritation produced by the stricture and decomposed urine had excited chronic inflammation and suppuration

of the mucous coat of the bladder, accompanied with a low febrile state, and yet the man had continued to work at his usual avocation, till complete retention made him submit to treatment. By introducing and retaining a very small silver catheter, dilatation was effected so as to allow a No. 3 to be passed, and when No. 6 was introduced the bladder was washed out, so as to get rid of the thick, purulent, fetid urine, which seemed to lodge in the posterior fundus of the organ. The dilatation was continued up to No. 13, and the man left cured, but was ordered to come and have an instrument passed occasionally; but since the first few weeks he has ceased to come.

Weir's case is chiefly remarkable from the seat of obstruction, viz., the membranous part of the urethra, just in front of the prostate. The contraction was the effect of laceration, resulting from indirect injury. He was struck on the hip and sacrum by a block of coal falling on him whilst stooping; this was followed immediately by swelling in the perinæum, bleeding from the urethra, and retention of urine. When admitted into hospital some eight weeks subsequently, he could hardly pass water at all, and often had fits of retention. I managed, by introducing my finger into the rectum, where I could feel the thickening, to guide a No. 3 catheter into the bladder and retained it, and gradually dilated the stricture; but, like all cases resulting from injury, the contraction tends to recur, and requires the patient to have instruments used occasionally.

The case of Weber furnishes an example of an insidious form of urinary infiltration. In passing through the ward, I was struck by his anxious expression of countenance and sunk appearance, and expressed my fear of infiltration having occurred, but was then informed that the retention had been relieved by the catheter, which had been secured in the bladder. On examining him there was no swelling in the scrotum or perinæum, but I saw that the penis was hard and swollen, and on looking carefully I found a dusky spot on the dorsum of the penis, which was boggy to the touch. This I at once incised freely, and finding that it led upwards to undermined tissue at the lower part of the abdomen, I made counter-openings there also. Subsequently incisions were required at various points on the lower part of the abdomen, and in the fore part of the scrotum, as urinary abscesses formed; his strength being supported by stimulants. The urine had evidently escaped from some small ulcerated spot or false passage in the anterior part of the urethra, into the subcutaneous cellular tissue of the body of the penis, and thence spread forward to the front of the abdomen, a condition more likely to be overlooked than when infiltration of urine occurs rapidly from rupture or ulceration of the urethra in the perinæum.

M'Ghee's case forms an excellent commentary on the alleged "rapid, safe, and effectual method" of treating tight strictures, by the application of potassa fusa. In his case, whilst the natural passage remained so contracted as to admit No. 3 catheter with difficulty, a

new canal had been tunnelled which admitted a No. 13 bougie with great ease, only unfortunately it passed into the cavity of the rectum instead of into the bladder. In this case, as the false passage was not merely between the bladder and rectum, but fairly into the gut, the handle of the bougie could be depressed fully, and the point felt free as if in the bladder; and so, I believe, dilatation was carried on unsuspectingly, till difficulty of micturition necessitated the use of the catheter, and so led to a knowledge of the true state of the case. It required great care and patience, after he came under my charge, to avoid the false passage and dilate the natural one; but at last I got the natural passage fully dilated, and the false passage is now gradually contracting.

Of the two instances in which section of the urethra was performed, one was for stricture and fistula resulting from injury, and in it the ordinary perineal section was performed successfully. In the other case, that of James Gallacher, there existed a stricture, or almost complete occlusion of the urethra, extending from the orifice backwards, for about five lines, with great induration. This had given rise to complete retention of urine, and urinary abscess, threatening infiltration. When the patient was admitted, the abscess in the perinæum was, of course, at once freely opened, and the retention was relieved by passing a gum catheter from the incision into the bladder. Subsequently, when the patient's health had rallied, I tried to pass instruments through the stricture at the orifice, but could not succeed in passing even an Anel's probe. Knowing the facility with which instruments can be passed from the urethra behind the stricture forwards, I made the patient rest on his hands and knees, and introduced a small probe-pointed grooved urethral director from the opening in the perinæum, and readily passed it through the stricture and induration, till its probe point appeared at the orifice, and then pushing it further forwards, an assistant held it firm. The grooved part being now fairly lodged in the stricture, I introduced the point of a tenotomy knife obliquely through the integuments, and entered it into the groove of the director, a line or two behind the induration, and divided the stricture freely by subcutaneous incision, and then introduced a No. 9 catheter through the divided parts down to the opening in the perinæum, and retained it for 48 hours. The case proceeded most favourably, the wound in the perinæum healed rapidly, and before the patient was dismissed, he was furnished with two short bougies or dilators, and taught to use them, so that he might introduce them occasionally, and so prevent contraction recurring. As a general rule, I have a great dislike to the internal division of a stricture, or to subcutaneous section, from the dread of slow infiltration and diffuse abscess, which often follow these methods; but in this case it will be observed, that whilst from the length of the stricture and its close proximity to the orifice it was desirable to avoid complete section of all the textures, it was free from all risk of infiltration, as the urine was passed entirely

through the incision in the perinæum, and I took care not to pass the gum catheter into the bladder for fear of conducting any urine forwards, but merely passed it through the divided parts, and retained it as a dilator. After eight or ten days I used to pass a catheter into the bladder so as to favour the healing of the perinæal wound, and so re-established the patency of the canal.

SECTION EIGHTH.—DISEASES OF TESTICLE.

Hydrosarcocele.

1. Robert Thomson, æt. 22. Hydrosarcocele of twelve months' duration. Fluid drawn off for the first time four months ago. No iodine injected. Fluid again collected, and was drawn off. Testicle considerably enlarged, and on this occasion the fluid was more flakey. Considerable suppuration followed, and the entire cavity of the tunica vaginalis was laid open, giving vent to a large quantity of pus and serum. Poultices were applied for a few days, and the wound was then allowed to granulate from the bottom. Dismissed cured.

2. G. Brown, æt. 29. Hydrosarcocele of six months' duration. As the tumour presented the ordinary appearance, a trochar was introduced, and about $\frac{3}{4}$ vi. of serous fluid drawn off. Considerable constitutional disturbance followed; and as there was great tension of the scrotum, the tunica vaginalis was laid open, giving vent to a large quantity of pus. Pain much relieved. Constitutional disturbance less severe. From this period patient steadily improved, and was dismissed cured.

Hydrosarcocele, with incarcerated Congenital Hernia.

John Scott, æt. 22, a healthy young man, states that his left testicle began to swell about six years ago, though at times the swelling disappeared. About a fortnight prior to admission, the swelling increased rapidly, and was accompanied with excruciating pain, which was more particularly referred to the lumbar region. On examination, the swelling was pyriform in shape, opaque, doughy to the feel, erythematous, and unaffected by pressure. An incision was made through the scrotal tunics, when, after evacuating a quantity of sero-purulent fluid, a knuckle of gut was found fixed to the extra-abdominal portion of the thickened tunica vaginalis by inflammatory adhesions. A gentle aperient was given the same evening, and the bowels were freely opened on the following morning. There was considerable suppuration, and a counter-opening was required, after which it healed rapidly, and he was dismissed cured.

Fungoid Testicle.

Edward Tobin, æt. 24. A fungoid mass protruded through the integument, four times the size of a normal testicle. The skin

was dissected round the margin of the tumour, and brought over it and retained by means of silver sutures and strips of adhesive plaster. Cured.

Remarks on Diseases of Testicles.—The only case in this section to which I would draw special attention is that of J. Scott, as it exemplifies the necessity for great caution in dealing with such cases, even when the local and general symptoms are as distinctly indicative of suppuration as they were in this instance.

I had seen the patient some months previously; there was then considerable swelling of the testicle and cord, with some fluid in the tunica vaginalis. From the history of the case, which I received from my friend, Dr Otto of Pathhead, whose patient he was, there seemed pretty conclusive evidence that a portion of gut sometimes descended; and although at the time I first examined him there was no gut down, yet I found that by pressure, when he was recumbent, I could gradually empty the fluid into the abdomen. In such circumstances, when there is no swelling of the testis or cord, I generally recommend a truss to be worn, to try and obliterate the communication with the abdomen, and then treat the collection of fluid in the tunica vaginalis as an ordinary hydrocele; but in this case the state of the cord and testicle contra-indicated the use of a truss, and I therefore merely advised the use of a suspensory bandage, and rest. On the occasion of his admission into the hospital, as recorded in the Report, the symptoms were evidently those of acute suppuration in the tunica vaginalis, and as his bowels were regular, and no other symptom of hernia was present, it might seem as if there was no risk in freely opening and evacuating the collection. But, as I explained at the time, since we can never be sure of all the contents of such a cavity, I proceeded to cut down upon the collection cautiously, and, on carefully puncturing the sac, a gush of sero-purulent fluid took place. I then enlarged the incision with a probe-pointed bistoury, and then the propriety of such cautious procedure became manifest, as a loop of intestines could be seen and felt adherent at the upper part; it was not constricted, however, and I therefore did not interfere with it, but applied warm water dressing, and after a day or two began the use of small doses of calomel and opium, to try and cause the destruction of the adhesions, and favour the ascent of the intestine. This gradually took place; for some weeks afterwards, having occasion to dilate the opening, which had contracted, to give freer vent to the pus, I found that the gut had disappeared, and ultimately the patient was dismissed, cured of the scrotal swelling, and, what was more important, relieved from the risk of recurrence of congenital hernia.

SECTION NINTH.

TABULAR VIEW OF DISEASES AND INJURIES OF BONES.

NECROSIS.

George Stevenson, admitted Nov. 1. Bones of toe. Cured.
 H. Murphy, adm. Dec. 13. Head and neck of humerus. Refused treatment.
 John Hutton, admitted April 2. Tibia. Cured.
 John Bennet, admitted April 7. Femur. Relieved.
 Helen Watson, admitted June 10. Femur. Refused treatment.
 Cath. Cowan, admitted June 17. Femur. Cured.
 Mary Jane Dempster, admitted June 19. Tibia. Relieved.
 John Marwood, admitted July 7. Tibia. Relieved.
 William Calder, admitted July 29. Tibia. Cured.
 Fraser Stark, admitted August 9. Forearm. Relieved.

FRACTURES.

Lower Jaw.

Mary Skirving, admitted Nov. 1. Fracture of neck of condyle. Cured Nov. 25.

Vertebræ.

William Falconer, admitted June 13. Cured July 29.
 Mary Murphy, admitted Sept. 5. Improved Sept. 23.

Ribs.

James Diguam, admitted Jan. 29. Cured.
 James Dignam, admitted Feb. 19. Cured.
 John Johnstone, admitted April 21. Cured.
 George Wilson, admitted May 24. Cured June 17.

Pelvis.

Andrew Muir, admitted Sept. 17. Cured Oct. 1.
 James Bald, admitted Jan. 24. Cured Feb. 23.

Femur.

William Hay, admitted August 8. Cured Oct. 3.
 Thomas Lindsay, admitted Oct. 29. Cured Dec. 18.
 Peter Roxburgh, admitted Nov. 11. Cured Feb. 14.
 Mary Ann Paton, admitted Nov. 15. Neck of Femur. Cured Jan. 7.
 Alex. Aitken, admitted Nov. 20. Neck of Femur. Cured Dec. 31.
 James Mitchell, admitted Dec. 17. Cured Feb. 12.
 William Anderson, admitted Jan. 15. Cured April 9.
 John Stewart, admitted Jan. 24. Cured April 3.
 John Taylor, admitted Jan. 29. Cured March 30. (Epiphysis separated.)
 Thomasina Miller (Poor-house), æt. 75, adm. March 16. Neck. Cured April 20
 James Henderson, admitted April 30. Cured August 23.
¹Christina Cowan, admitted May 16. Died May 24.
 Thomas Scott, admitted August 17. Cured.

Femur—Compound.

P— L—, admitted Oct. 21. Cured Dec. 17. (Amputation.)
 James Russell, admitted Nov. 22. Cured Feb. 25. (Comminuted.)
 William Brown, admitted Nov. 24. Cured Feb. 5.

¹ This was a case of fracture through the cervic femoris and trochanters in a woman aged 85, who never rallied from the effects of the injury.

Both Bones of Leg—Simple.

Louisa Gardner, admitted August 2. Cured Sept. 18.
 John Murray, admitted Sept. 11. Died Oct. 21 (æt. 82). Arm also fractured.
 John Hoggan, admitted Dec. 25. Cured March 30.
 Janet Russell, admitted Nov. 4. Cured Dec. 13.
 John Sangster, admitted Nov. 7. Cured Jan. 18.
 M. Johnstone, admitted Nov. 10. Cured Dec. 10.
 Alexander Horsburgh, admitted Jan. 15. Cured Feb. 18.
 Anna Dawson, admitted Jan. 31. Cured March 7. (Malleoli.)
 Margaret Raith, admitted Jan. 30. Cured March 18.
 John Thomson, admitted July 2. Cured August 19.
 Joseph Philip, admitted August 1. Cured Sept. 7.

Both Bones of Leg—Compound.

Alexander Sibbald, admitted Nov. 29. Cured Dec. 11.
 Alexander Ranken, admitted Jan. 1. Died Jan. 4. (Both legs—amputation.)

Both Bones of Leg—Comminuted.

Margaret Glass, admitted Oct. 4. Cured Nov. 12.
 John M'Caul, admitted Oct. 7. Cured Dec. 28.
 Thomas Ferguson, admitted May 3. Cured July 22.

Both Bones of Leg—Co. Com.

William Pollock, admitted June 12. Cured July 18. (Amputation.)

Tibia—Simple.

Thomas Inglis, admitted August 7. Cured Sept. 15.
 John Norrie, admitted Sept. 25. Cured Nov. 1.
 James Hamilton, admitted Dec. 7. Cured Jan. 18.
 Thomas Ballantyne, admitted Jan. 5. Cured April 22.
 Margaret Glass, admitted Jan. 8. Cured February 25.
 Jane Watson, admitted Dec. 28. Cured February 7.
 Mitchell M'Guire, admitted February 19. Cured March 16. (Malleolus.)
 William Purves, admitted April 11. Cured May 8. (Malleolus.)
 Susan Preshaw, admitted May 2. Cured June 15.
 James Grant, admitted June 17. Cured July 23.
 James Ross, admitted June 30. Cured July 28.
 John Torrance, admitted July 20. Cured August 22.

Fibulæ—Simple.

Jane Rutherford, admitted Dec. 27. Cured Dec. 31. (Malleolus.)
 John Donaldson, admitted Jan. 9. Cured Feb. 13. (Malleolus.)
 Helen Marshall, admitted Jan. 11. Cured Feb. 3. (Malleolus.)
 William Bruce, admitted July 21. Cured August 9.
 William Fairbairn, admitted August 27. Cured Sept. 24.

Tibia—Comminuted.

James Barnetson, admitted Oct. 3. Cured Dec. 7.

Tibia—Compound.

George Balmore, admitted July 16. Cured Sept. 4.

Patella.

Peter Riley, admitted June 18. Cured June 26. (Old fracture.)
 Charles Williams, admitted June 18. Cured Sept. 11.
 Ann Creelman, admitted Sept. 17. Cured.
 Rupture of ligamentum patellæ. Cured.

Foot—Compound.

Janet Hay, admitted June 25. Cured Aug. 8. (Amputation below knee.)
 Daniel M'Daid, admitted Aug. 3. Died Aug. 16. (Amputation below knee.)

Humerus—Simple.

John Paterson, admitted Oct. 12. Cured Oct. 22.
 Thomas Gillon, admitted Jan. 7. Cured Jan. 22.
 Mary Dukie, admitted April 21. April 25.
 Robert Horn, admitted May 7. Cured June 1.
 Walter Veitch, admitted June 27. Cured July 11.
 Neil McLean, admitted July 24. Cured Oct. 19.
 John Watson, admitted Sept. 10. Cured Oct. 30. (Comminuted.)

Radius and Ulna—Simple.

George Green, admitted March 12. Cured March 22.
 Mary Berry, admitted April 19. Cured April 25.
 Isaac Philip, admitted Aug. 20. (Also malleolus.) Cured Oct. 2.

Radius and Ulna—Compound.

Archibald Thomson, admitted Oct. 20. Cured Nov. 15. (Amputation.)

Tarsus—Simple.

Alexander Turbet, admitted Aug. 31. Cured.

Left Clavicle, Femur, and Tibia, Right Tibia and Fibula.

Charles Barclay (fell down the shaft of a mine), adm. June 21. Cured Sept. 13.

Note.—Besides these cases of fracture which were treated in the Hospital, there were numerous cases of fractures and dislocations of the upper extremity treated at the Hospital as out-patients, which furnished examples of almost every form of these injuries for clinical instruction.

Remarks.—In regard to the diseases and injuries of the bones, space forbids me doing more than exhibiting a general tabular view of the cases treated; which, I think, will show that there was no lack in these departments for clinical observation. In last year's Report I stated generally the plans I adopted of treating the different forms of fracture of the lower extremity; but having had very considerable opportunities of treating fracture of the femur, both in hospital and private practice, and having every reason to be satisfied with the results, I wish to take this opportunity of stating more fully my views regarding some principles to be attended to, in treating fractures of the shaft of the femur with the long splint. Doubtless, in every case, the careful setting of the fracture at the first, making sure that it is fully the same length as the sound limb, and that there is no obliquity of the pelvis, or other source of fallacy, which might deceive as to the apparent length, is all important and essential. No one can be more opposed than I am to the use of the long splint as a rack to elongate forcibly an imperfectly adjusted fracture of the femur; but, on the other hand, I am equally convinced that, however well adjusted at first, there will be great danger, almost certainty, of retraction and shortening, unless we keep up the extension we have effected, for the first ten or fifteen days at least. In a fracture of the femur, the extensor and

flexor muscles alike tend to shorten; and as the displacing muscles are pretty equally balanced, we cannot relax them as in treating a simple fracture of the leg: hence, if the extension and counter-extension be not kept up, the muscles tend to draw the broken fragments over each other. If all fractures of the femur were transverse, so that the broken surfaces, when properly adjusted, would serve to check each other when lateral displacement was prevented by the lateral splints, or if muscles ceased to act whenever the fracture was set, then our plans of treatment might be much simplified; but, unfortunately, fractures of the femur are often oblique, and the opposed inclined planes tend to glide upon each other and produce shortening from very slight movement, and muscles contract and cause displacement even after the most careful adjustment; for these reasons, I hold that we must take means to prevent such shortening by *keeping up the extending power, not increasing it—merely keeping the advantage we have obtained*—and all that is required for this purpose is to keep tight the perinæal band at the upper part of the splint, which, by pressing down the splint, retains the limb of the proper length. I have more than once seen surgeons proceed to increase extension by tightening the handkerchief or bandage which fastens the foot to the lower part of the splint, the effect of which is simply to push up the splint, and with it the lower broken portion, and so cause shortening. If the lower bandage requires to be re-adjusted, extension and counter-extension should either be made by assistants, as when setting the fracture originally, or else firm counter-pressure should be made by an assistant pressing down or fixing the splint from above, whilst the foot bandage is being tightened.

In adjusting fractures of the femur at first, I make it a rule that the fractured limb should be fully half an inch longer than the sound one, so as to allow for the yielding of the intervening articulations of the knee and ankle.



ARTICLE II.—*Case of Cancer of the Cæcum, accompanied with Cæco-duodenal and Cæco-colic Fistulæ.* By D. RUTHERFORD HALDANE, M.D., Pathologist and Special Assistant Physician to the Royal Infirmary.

JOHN D—, fifty-two years of age, a native of the North of Scotland, was admitted into the Royal Infirmary on the 5th June 1861, complaining of severe pain in the right iliac region.

Past History. The patient, a man of considerable intelligence, stated that he had been at sea all his life, at first before the mast, but latterly as master of a coasting vessel. His habits had always been temperate, and with the exception of an attack of

ague many years before, his health had been uninterruptedly good until his present illness. About two years ago he began to suffer from pain, at first in the back and shooting through the abdomen, but of late chiefly referred to the right iliac region. From that time his appetite fell off, he had occasional vomiting, and his complexion gradually assumed its present sallow appearance. Notwithstanding diminished strength and almost constant uneasiness, he was able to continue at sea until six months ago. At that time there was a swelling in the right hypochondriac region, and a surgeon whom he consulted informed him that he had a disease of the liver. During the last two months his legs began to swell, hardness gradually made itself manifest in the right iliac region, and the pain in the same situation increased so much as to prevent him from standing erect. His wife stated that almost from the commencement of his illness, his temper had become very irritable.

Condition on Admission. The patient, who was moderately emaciated, had a sallow complexion with a faintly yellowish tinge, and a somewhat anxious expression of countenance. He complained of pain in the right iliac region, much aggravated on attempting to straighten the body, but relieved by direct pressure. There was almost total loss of appetite, and some thirst; he had a feeling of nausea, but had not vomited lately; his bowels, which at one time were loose, had of late been habitually constipated. His urine, passed in natural quantity, was slightly turbid, of faintly acid reaction, and contained no albumen. On standing, it speedily became alkaline, and abundant crystals of triple-phosphate were deposited.

On examination, the abdomen was found to be somewhat enlarged, chiefly owing to tympanitic distension of the intestines, but fluctuation could be felt in the dependent regions. There was slight swelling of a rather irregular character in the right iliac region, and on palpation, a diffused, rather superficial hardness could be felt. The superficial inguinal glands on this side were a little enlarged, and somewhat tender on pressure. There was swelling of both lower limbs, chiefly, however, of the right, which was markedly cedematous, and pitted on pressure. There was no difference in the temperature of the limbs, but the patient stated that he suffered much from cold feet. On percussion, the extent of the hepatic dulness was found to be considerably diminished, not amounting, on the right side, to more than between two and three inches from above downwards, while in the epigastrium percussion was quite clear.

The opinion formed at this time regarding the case was, that there was cancer of the peritoneum, chiefly in the right iliac region; that there was pressure (either from thickened peritoneum, or from enlarged glands) on the aorta, vena cava, and right iliac vein; and that the liver was probably cirrhotic.

As the patient's bowels were constipated, he was ordered to take an electuary containing bitartrate of potash and magnesia; hot

fomentations were directed to be applied to the painful part. His diet to consist of whatever he should fancy, and to include four ounces of wine.

During the week following admission, the patient's condition had improved considerably: the pain in the right groin had diminished; he was able to stand erect, and even to walk a few steps without seriously aggravating it. His appetite had slightly improved, his bowels had been kept regular, and he had had neither sickness nor vomiting.

He was directed to continue the same treatment.

On the 19th of June, the bowels having shown a tendency to become loose, he was ordered to discontinue the use of the electuary, and to take three grain doses of the citrate of iron and quinine.

On the 22d it was found that diarrhœa had set in during the previous night, and at visit the patient had a somewhat exhausted appearance. Grapes, which he had been taking with some relish, were directed to be stopped, and he was ordered chalk mixture, with the addition of catechu and laudanum.

On the 24th the diarrhœa was little, if at all, relieved; the matter passed was quite liquid, of a light colour, and had a most offensive, *rotten* odour. The appetite was totally gone; there was much thirst; he complained of a feeling of sickness, but there had been no vomiting. The hardness in the right groin was found to have extended, the swelling was more marked, and there was a blush of redness on the skin.

On the 27th there was marked swelling of the right iliac region, with considerable redness. On gentle palpation of the tumour, emphysematous crackling was felt.

The patient was seen by Mr Spence, who detected deep fluctuation, and made an incision into the most prominent part of the swelling, with the effect of giving issue to bubbles of air, pus, and thin feculent matter, similar to what had been passed by stool. Charcoal poultices were directed to be applied to the groin, and an increased quantity of stimulants was ordered.

During the three following days the patient gradually sank; the diarrhœa went on unchecked; the wound continued to discharge very fetid matter; and there was a constant feeling of sickness, but no vomiting; hiccough at last set in, and he died at noon on the 30th of June.

The body was examined 25 hours after death. When
Post-mortem Examination. the thorax and abdomen were laid open, it was found that the liver was pushed upwards by the distended stomach and intestines, and was overlapped by the right lung to such a degree that not more than two inches in depth of its substance was visible.

The heart and lungs were quite healthy.

The abdominal parietes in the right groin were in a sloughy condition.

The parietal peritoneum was adherent to the anterior surface of the cœcum, and the intestines in the right iliac and pubic regions were matted together. When the adhesions in the inguinal region were separated, a cavity filled with a dark-coloured fetid matter was opened into: this was found to be the cœcum, its anterior wall being in a gangrenous state. The sigmoid flexure of the colon was closely adherent to the cœcum, and a communication, fully as large as a crown piece, existed between them. About the point of junction of the cœcum and ascending colon, was an opening which admitted the little finger, and which communicated with the duodenum. On the duodenal aspect this opening had a regularly rounded form, and its edges were smooth; on the cœcal side the margins were irregular, and the passage of anything between the two portions of intestine must have been almost or altogether prevented by the prominence of the thickened and indurated folds of the cœcum. The opening was situated five and a half inches from the commencement of the duodenum, and was on the lower aspect of the gut. The thickened condition of the walls of the great intestine extended from the commencement of the cœcum to about four inches along the ascending colon, where it ceased abruptly, but where there was a stricture which barely admitted the point of the fore-finger. The thickening was found to be dependent upon the presence of cancerous matter in the sub-mucous tissue; in some places the mucous membrane was still entire, but in others it had given way, and in these situations the inner surface of the gut had a fungating appearance. Owing to the swollen condition of the cœcum, the opening of the ilium into it was considerably obstructed; only one finger could be passed along.

The lumbar glands lying along the lower part of the spine were enlarged and cancerous, and pressed upon the aorta and vena cava.

The right ureter lay behind the thickened commencement of the cœcum, and was compressed by it; above the obstruction the duct was dilated, and the kidney was found to have undergone partial cystic conversion.

The liver was of the natural size; it was of a buff colour, was softer than natural, had a specific gravity of 1030, and on microscopic examination, the hepatic cells were found to be loaded with fat.

All the other organs were natural.

Remarks. The interest of this case is chiefly pathological, though it presents some points of practical importance. From the time of the patient's admission into hospital, no doubt was entertained that he was the subject of malignant disease: the duration of the illness, the constant pain, the gradual loss of flesh and strength, and the cachectic appearance, all pointed to a conclusion which physical examination confirmed. From the superficial character of the hardness, I supposed that the peritoneum was the seat of the disease; the possibility of the cœcum being affected did not occur to me. No doubt at the time he was first seen adhesions

had taken place, and the cœcum consequently was in close contact with the abdominal wall. The occurrence, however, of emphysema of the integuments, and the escape of air and feculent matter from the incision, made it clear that the intestine, and probably that the large intestine, had been opened into. From the appearances found on dissection, it would seem that the disease commenced in the cœcum; adhesion of its serous surface to the abdominal wall took place, sloughing of the wall of the gut occurred, and air and feces escaped into the cellular tissue.

The existence of fistulous communications between different parts of the intestine is interesting. These communications are not of frequent occurrence, although a considerable number are on record, and have been brought together by Dr Murchison.¹ Amongst these intestinal fistulæ, perhaps the most interesting are those in which there is an abnormal communication between the stomach and transverse colon. Of this variety I have met with two instances; one (already published by Dr Murchison) was in the case of a man aged 40, in whom the condition in question was the consequence of a simple or perforating ulcer of the stomach; the other was in a man aged 47, in whom, as the result of cancer of the great curvature of the stomach, there were two gastro-colic fistulæ. Cœco-duodenal fistulæ appear to be much rarer, and, indeed, from the comparatively fixed condition of both portions of intestine, are but little likely to occur.

In the case under consideration there were no symptoms which suggested the existence of any abnormal intestinal communications. There was no vomiting during the patient's residence in hospital, and it was not noticed that the feces contained food in a partially digested condition. In fact, although an opening existed between the cœcum and the duodenum, I question whether anything passed from the one portion of intestine to the other. The communication, as described in the account of the post-mortem examination, was of a valvular character, and could scarcely have permitted the passage of the intestinal contents. It seems probable, however, that the greater part of the feces passed directly from the cœcum into the sigmoid flexure of the colon, for the stricture of the ascending colon must have been a serious impediment to the natural course of the excrements, while the opening into the sigmoid flexure was so free, that every facility was afforded for the contents of the cœcum to take the shorter route. Such a communication is of course attended with very different results from what would follow in the case of a free opening between the duodenum and the large intestine. In the latter case, chyme would pass directly into the colon, absorption would take place very imperfectly, and death from inanition would speedily ensue. In the cœco-colic fistula, however, matters already feculent are merely expelled somewhat sooner than natural, and probably no material effect on nutrition is produced. In the above

¹ See the July and August Numbers of this *Journal* for 1857.

case, in consequence of the contraction near the commencement of the colon, the communication of the cœcum with the sigmoid flexure was probably rather advantageous than otherwise.

The only other point which seems to require remark is the condition of the liver. From the greatly diminished hepatic dulness, and from the presence of a slight degree of ascites, I considered it probable that the organ was cirrhotic; this, however, did not turn out to be the case. The liver was of the natural size, and the character of the percussion was explained by the fact of the organ having been pushed upwards and backwards by the distended intestines behind the lung, to an extent I have rarely observed.



ARTICLE III.—*The Wire Seton in Hydrocele.* By JAMES D. GILLESPIE, M.D., F.R.C.S.E., Surgeon to the Royal Infirmary of Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, Nov. 20, 1861.)

IT is now about two years since I published in the *Medical Gazette* an account of the treatment by the wire seton of two cases of hydrocele. I had felt it my duty to place before my professional brethren the unfavourable experience I had had of such a procedure, as it had been, through the same medium of communication, urged strongly upon the profession.

I confess that I was led to make trial of the wire seton upon theoretical grounds, — believing, with Professor Simpson, that adhesive inflammation only was likely to be excited by the introduction of metallic wires. The sequel proved, that violent and indeed dangerous suppurative action might arise from the employment of such a seton, and subsequent observation places this fact on unassailable grounds.

I might have remained contented with what I have already written about this plan of treatment, had I not become aware, that a pamphlet was published in August of the present year, and extensively circulated among the professional and “unprofessional”¹ public, which contained two articles highly laudatory of the wire seton, as also a lengthened criticism on my own remarks. I shall not stop here to discuss the propriety of issuing such a pamphlet, containing purely surgical matter, for the benefit of *unprofessional*, or rather, I should suppose, non-professional readers; but there is a sentence contained in that *brochure*, as it has been called, which has determined me on bringing the subject again before the Medico-Chirurgical Society.

That sentence is as follows:—“Had Dr Gillespie seen this

¹ Medical and Surgical Memoranda, by Dr James Young, *vide* Preface.

operation performed by Professor Simpson, the probability is, his cases might have terminated more successfully."¹

This is a delicate (?) way of insinuating two things: first, that the suppuration which ensued in my cases was due to improper treatment; and secondly, that no one was likely to prove successful, who had not, like the author, availed himself of the opportunity of seeing Professor Simpson employ the wire seton in a case of hydrocele.

It is evident that this advocate of the wire seton prefers the "argumentum ad hominem" of Phutatorius to the "argumentum ad rem" of Yorick, and by such a line of reasoning reduces the successful employment of the wire seton to a comparatively small number of operators. I am sure no one would more strongly and sincerely repudiate such a line of argument than Professor Simpson himself, though he did more for the introduction of metallic wires into surgical practice here—and indeed I should say, so far as I am aware, in Great Britain—than any other member of our profession.

Professor Simpson instituted a number of carefully conducted experiments, to show the impunity with which metallic substances might be incarcerated in living tissues; and, reasoning from analogy, concluded that wires passed through a hydrocele were likely to cause merely adhesive inflammation, and thus effect a speedy and simple cure. The result of extended investigation into this plan of treatment has proved, that hydrocele may be cured, and both speedily and easily cured, by such a method; but it has no less satisfactorily established the fact, that a certain, and no small per-centage, of cases, notwithstanding every precaution, will suppurate.

I believe I have now been able to collect sufficient data to convince this Society that the opinion I held two years ago is substantially correct. I shall, as briefly as possible, give a narrative of the cases, which have been placed on record, since I first challenged the eulogistic notices of the wire seton in hydrocele, and shall then allude to what has been written in its favour, concluding with what appears to me a just criticism on its merits.

CASE 1, in my own practice. A. K., aged 68, admitted into the Royal Infirmary Jan. 26, 1859, with a hydrocele of the left side of the scrotum, of four years' duration. Tumour the size of a large cocoa-nut. Palliative treatment only has been employed, the hydrocele having been tapped twice a-year.

Feb. 10.—Ten thin iron wires passed through the hydrocele, by means of a lance-pointed packing-needle; scrotum supported by bandages; patient kept in bed. In 18 hours tumour nearly as large as before, very hard, but not very tender. In 24 hours the seton removed. The swelling gradually subsided, and for a week the patient was exhibited as a case of cure; but the fluid began to re-accumulate, and by the 9th of March the tumour was as large as ever.

¹ Medical and Surgical Memoranda, by Dr James Young, page 23.

The seton was again introduced, involving a larger portion of the sac, and retained for 48 hours. The progress of the case was satisfactory till the second day after removal of the wire, when high fever set in, evidently the precursor of suppuration. Fetid, sloughy, purulent matter was finally evacuated by free incisions; and the patient left the hospital on the 24th of April, his cure having occupied 73 days!

CASE 2, also noted by myself. J. P., aged 68, a shoemaker, of regular habits. Not an hospital case. This man had a double hydrocele, as also a hydrocele of the cord, on the right side. The wire seton was passed through the left hydrocele, the right one was simply tapped, and the hydrocele of the cord was injected with half a drachm of the strong tincture of iodine.

The pain of the injected hydrocele was most acute for the first hour or two, but subsided before evening.

Forty-eight hours after its insertion, the seton was removed. On the third day the hydrocele of the cord was solid, and free from pain; there was slight re-accumulation in the hydrocele that had been tapped, and the scrotum, through which the seton had been passed, was much inflamed. The left sac finally supplicated, causing great prostration of strength, with danger to life. The hydrocele on the right side disappeared, and the hydrocele of the cord was consolidated, having become the size of an almond. The cure by the wire seton in this case involved a period of nearly three months!

CASE 3, by J. B. Thomson, Esq., L.R.C.S.E., Resident Surgeon of the General Prison of Scotland, Perth.¹ F. H., aged 20, labourer. Hydrocele size of small cocoa-nut. Simple acupuncture tried. Swelling disappeared in 36 hours. Two months and a-half afterwards, swelling as large as before.

Dec. 4th.—Professor Simpson's operation tried. Hæmorrhoidal needle, armed with a double wire, procured from the Professor, employed. Wires withdrawn on the fourth day, when the swelling had gone, and it was hoped a radical cure had been effected.

12th.—Violent inflammation supervened, and suppuration of a very troublesome character, lasting four weeks. After the parts healed, it appeared that there was thickening of the scrotum, and obliteration of the sac below the points from which the wires had passed, but no complete cure. The hydrocele again formed, and filled at the upper part of sac, which never had been obliterated.

Feb. 19th.—Fluid accumulating.

March 26th.—Sac as big as before. Four iron wires inserted, and withdrawn on the third day. Inflammatory action followed a few days after the removal of the wires, more violent than on the former operation. For a month the patient was confined to bed, and twice free incisions were required.

May 10th.—Dismissed cured. Length of treatment, 158 days!

¹ Medical Times and Gazette, December 10, 1859, page 576.

I give Mr Thomson's concluding remarks:—"One or two conclusions are unavoidable,—viz., that violent inflammation may and does follow the use of iron wire setons, and that even this violent inflammation may fail altogether to obliterate the cavity of the tunica vaginalis."

CASE 4. This is entitled, "Radical Cure of Hydrocele by Metallic Seton at the Birmingham Workhouse Infirmary, under the care of Redfern Davis, Esq."¹ Tumour the size of a small cocoa-nut. The plan suggested by Professor Simpson precisely followed out.

Feb. 5th.—An iron wire introduced longitudinally, and another one transversely.

12th.—Wires withdrawn. A copious purulent discharge issued from the track of the wires.

It may be argued that the wires were kept in too long in this case; but how are we to fix the precise time for removal? In the next case it will be observed they were retained much longer, and did not even induce adhesive inflammation; while in others the suppuration made its appearance days after withdrawing the seton.

CASE 5, under the care of Mr Erichsen, at King's College Hospital.² Silver wire kept in a week, but not enough of inflammation excited. A second wire introduced by its side, and kept in nine days longer, which caused a good deal of inflammation; but the hydrocele refilled. It was afterwards tapped and injected; again refilled; and finally, was cured by the silk seton, which induced suppuration.

CASE 6, by Thomas Davidson, Esq., L.R.C.P., L.R.C.S., Edinburgh.³ R. B., aged 67, hydrocele existed 10 years. Tapping drew off 22 ounces of serum. Half an ounce of diluted tincture of iodine injected. In a year the fluid reaccumulated, 33 ounces drawn off, but no injection made; at the end of another year tapping again required.

Aug. 22.—Metallic seton now had recourse to. Six thin wires introduced, and allowed to remain 36 hours. During the next 24 hours intense inflammatory action was lighted up in the tunica vaginalis, and the scrotum was distended by effusion to an immense extent. A free incision evacuated a considerable quantity of fetid pus. Repeated abscesses formed, and the life of the patient was in extreme danger from exhaustion.

Nov. 10.—Patient cured in 80 days.

CASE 7, by T. Sympson, Esq., M.R.C.S.E., Surgeon to the Lincoln County Hospital.⁴ G. H., aged 4, hydrocele size of hen's egg. Had been twice punctured, a single silver wire passed through it, which was allowed to remain 24 hours. The scrotum became red, very tender and painful, and the constitutional symptoms high.

18th.—An incision required giving exit to an ounce of pus.

25th.—Another abscess opened.

¹ British Medical Journal, 1859, page 284.

² Idem, page 690.

³ Medical Times and Gazette, 1859, page 653.

⁴ Idem, 1860.

May 16th.—"Discharged with a scarred and roughened scrotum, but without a trace of the hydrocele."

Treatment lasted 62 days.

CASE 8. "Treatment of hydrocele by iron wire seton, as recommended by Drs Simpson and Young,"¹ by Mr Stainthorpe of Hexham, Northumberland. E. G. aged 58, a fourfold iron wire passed. Necessary inflammation very slow of setting in; seton allowed to remain till fourth day. Patient went on favourably till the eighth day, when a small abscess formed in the anterior wall of the scrotum. On the tenth day the abscess began to discharge by the apertures made by the seton. He then improved rapidly, and began to work. Nine weeks after the commencement of the treatment he was well.

I must here remark, that I presume this is the so-called successful case, to which Dr Young alludes, when he says he has received letters in favour of the operation from several surgeons in England, Ireland, and Scotland, Mr Stainthorpe of Hexham being one of the only two gentlemen named.

CASE 9, from a report with regard to the experience of Mr Gousland at the London Hospital.² Several cases have been lately treated successfully with the silver wire seton, but in the following case there was severe suppurative inflammation of the cavity.

W. C., aged 32, tumour size of small fist. Tapped and injected with iodine, but the sac refilled.

May 28th.—Two threads of silver were introduced. Next day inflammation acute and pain severe. On the third day the inflammatory symptoms were so high the wires were withdrawn.

31st.—A vertical incision, three or four inches long, required to evacuate pus.

"Discharged from hospital cured, eleven weeks after admission; but he had undergone a very serious illness."

CASE 10, by Raphael W. Read, Esq., L.R.C.P.E., F.R.C.S., Surgeon to the 30th Regt.³ D. M., aged 20, in the Donegal Militia. Hydrocele moderately large. Had been tapped, but the fluid had reaccumulated.

Dec. 26th, 1859.—Trochar introduced, 9 or 10 ounces of fluid drawn off. A straight needle armed with a single thread of metallic wire passed through the canula, and brought out above.

27th.—Man anxious and feverish, complaining of great pain. Scrotum much swollen. Seton removed; having been only 21 hours inserted. Great constitutional disturbance.

Jan. 2d.—Obscure fluctuation. Scrotum boggy. An extensive incision made in the scrotum, now almost as large as the patient's head. Ill-conditioned matter came away, and large sloughs were exposed. Another large incision higher up required. Case very critical, demanding constant diffusible stimulants. Pulse so weak and frequent it could not be counted. Tendency to delirium.

¹ Medical Times and Gazette, 1860. ² Idem. ³ Lancet, 1860, page 184.

Feb. 9th.—Patient cured. Length of treatment, 45 days.

Dr Read's conclusion is as follows,—“The practitioner should pause before unhesitatingly receiving as free of risk this mode of treatment, or as devoid of pain.”

Having given the cases extracted from medical journals, showing the employment of the wire seton in an unfavourable light, it is but fair that I should furnish from the same source the evidence in its favour. First, then, we have the operation proposed to this Society, in November 1858, by Dr Simpson. The use of metallic wires was then exciting much notice in Edinburgh, and to him must be ascribed the credit of suggesting their employment in the radical cure of hydrocele.

In the first¹ and only case at that time, in which he had made use of the wires, the result proved most satisfactory; and Dr Simpson legitimately inferred, that the operation was worthy of further trial. I quote his concluding remarks,—“This method of treating hydrocele was much simpler in its performance than tapping and injecting; not by any means so painful to the patients; less likely to produce a suppurative or dangerous amount of inflammation; and, perhaps, experience would show also, betimes, that it was surer and more certain in its results.”²

We next have the cases of Dr James Young, six in number; and of these, No. 2 had discharge of pus from one of the wounds caused by the seton, and another (No. 6) had return of the hydrocele a month or two afterwards. It is true that Dr Young explains this by saying the patient got a blow, which reproduced the swelling; but as he asserts that the wire seton cures by closing up the tunica vaginalis by adhesive inflammation, it is surely evident that a blow could make no impression on such a radical cure, had it been previously effected.

Mr Pollock of St George's Hospital is reported to have employed successfully the wire seton in five cases. In one of these five we are told the inflammation “nearly produced suppuration, but at the same time the sac was obliterated.” The whole of this statement is by a reporter, whose name is not given; and I must say Mr Pollock's own record of his experience, or a detail of his cases, would have been more satisfactory. What does “nearly produced suppuration” mean? Was there, or was there not, suppuration of the sac? as we certainly are led to suspect from what follows—“but at the same time the sac was obliterated.”

In the *Dublin Hospital Gazette* we have two successful cases recorded—the first by Dr Quinlan of St Vincent's Hospital, the second by Dr Christopher Fleming of Richmond Hospital.

In the former case, the wires, eight in number, were kept in till the fourth day, and were removed when the sac was greatly swollen and inflamed, with tenderness of the spermatic cord. The sac did

¹ The first of Dr James Young's Cases.

² Edinburgh Medical Journal, December 1859, p. 547.

not, however, suppurate, but there was "slight suppuration of the cellular tissue of the scrotum, which, though it did not interfere with the cure, rendered convalescence a little more tedious than it otherwise would have been." I understand from Dr Quinlan that he has tried it in many cases since, and always with ease and success. Two strands of wire only are used, and removed when the slightest inflammation supervenes. Dr Quinlan says further, that this modification "almost completely does away with the risk of suppuration and of sloughing of the tunica vaginalis, of which under the former system he has known instances."

With regard to the supposition that a smaller number of wires, if withdrawn on the first appearance of inflammation, will almost completely do away with the risk of suppuration, I must direct attention to Case 3, where at first only two were employed, Cases 4 and 9, where two also were the number, and Cases 7 and 10, where only one wire constituted the seton, and in both of which latter cases, curiously enough, the single wire was allowed to remain the shortest time.

In the case narrated by Dr Christopher Fleming of Richmond Hospital, the seton was removed in 48 hours. Inflammation supervened, but not too violent, and the man was discharged in a fortnight, almost well.

Mr Edwards is also reported by Dr Young to have had a successful case, but the details are not given.

This is all that I have been able to gather from the medical journals favourable to the employment of the wire seton in hydrocele; and after what has been brought forward, it cannot take long to form a proper estimate of its merits.

It is evident, then, in the first place, that the wire seton, when all due care is taken, may speedily and safely effect a radical cure in hydrocele; but it is also as unquestionable a fact, that alarming suppuration may ensue, though the utmost possible attention has been bestowed on the case. Several of the cases I have narrated establish the fact that suppurative action may come on days after all fear of such a contingency had passed away. Indeed, in most of the cases detailed the wires were not retained so long as was deemed expedient in Dr Young's patients. Here I may allude to one reason given by Dr Young for failure in my first case, when I was obliged to have a second time recourse to the seton. He says, "This case might have succeeded after the first operation, had the wire seton been retained longer, and five wires doubled used in place of two."¹ Unfortunately for Dr Young's suggestion, the printer had mistaken two for ten, and *five wires doubled* were exactly the constituents of the seton! How retaining these longer would have saved the patient from the very dangerous suppuration that ensued, I leave it for himself to explain!

It is necessary, however, before condemning the use of the wire

¹ Op. cit., p. 26.

seton in hydrocele, to show that a better and safer method exists, which brings me to a comparison between this mode of procedure and the use of injections.

Injection of almost any stimulating fluid may cure a hydrocele; and if time permitted, I could point out numberless substances that have been employed, and have had their day of notoriety and praise, but for my present purpose it is not necessary to allude to any other fluid than the tincture of iodine, which has deservedly usurped the greatest share of favour in the present day.

It is difficult to collect facts with regard to the efficacy of this mode of treatment, as at present employed, for it is not now apparently considered of sufficient importance to write special notices about. What I believe to be much the best method of employing it is, to inject from half a drachm to two drachms of the tincture slightly diluted, and allow it to remain in the sac. This plan was first proposed by Dr (now Sir J. Ranald) Martin, of the E. India Co.'s Serv., has been advocated by Professors Liston, Syme, and Ferguson, and other eminent surgeons, and is the method which has been generally adopted in the Royal Infirmary here. It is now about twenty years since I first saw this mode of injection used in hydrocele, and I cannot recal any one case of suppuration resulting from the operation, though I have a vague impression that such an unusual and unfortunate complication once did occur. That sloughing of the scrotum has sometimes resulted I admit; but I am satisfied, that such an accident was occasioned by the mode, which was formerly practised, of distending the sac with diluted tincture, and then drawing it off,—occasionally some of the injection escaping into the cellular tissue, and causing the disastrous consequences, to which I have alluded.

As regards the efficacy of injections, it must be said, that sometimes, but very unfrequently, they fail; but the patient is not in a worse state than he was before, which cannot be said with justice of the wire seton, for when too much inflammation arises, most alarming symptoms may supervene.

I trust I may not be mistaken as regards my hostility to the wire seton. I am fully impressed with the fact, that metallic wires are not likely to induce suppuration; the principle of the operation is correct, so far as it goes; but certain counteracting circumstances have been overlooked, which I believe have mainly tended to excite suppurative action, and which no skill on the part of any operator can prevent. When a seton of any kind is passed through a shut sac, of such an irritable nature as the tunica vaginalis, and allowed to remain for hours, communication with atmospheric influences must result, and I believe that this is the true reason, quite independent of what the seton is constituted, which may give rise in some cases to suppuration.

The puncture made by the trochar and canula soon heals, shuts up the cavity, and thereby explains, I should say, the comparative

immunity from suppuration, when injections are employed. If metallic substances are to be used for the cure of hydrocele, it therefore appears to me that a safer method would be, to draw off the fluid by the ordinary trochar and canula, and then insert through the puncture a probe, or some small metallic body. This in time might excite sufficient adhesive inflammation, and at all events be only half as likely as the seton to cause suppuration. In the time of Pott, a somewhat similar idea was proposed, but laid aside as inconvenient and sometimes dangerous. The hydrocele was tapped in the usual way, but the canula was allowed to remain in the sac till sufficient inflammation was supposed to have ensued. But the canula being a hollow body, enabled the interior of the cavity to communicate directly with the external air, a very important disadvantage, I should say.

I merely throw out this suggestion for those who are dissatisfied with the treatment by iodine injection; for I shall conclude by stating, that I am myself perfectly well contented to abide by that long valued and, in my experience, sufficiently successful and safe operation.



ARTICLE IV.—*On the Temperature of Mineral Waters.* By J. ALTHAUS, M.D., Member of the Royal College of Physicians of London, etc.

THE temperature of mineral waters exercises a most important influence upon the mixture and proportion of the solid and gaseous constituents they contain, and no less upon their effects on the human body. A low temperature enables the springs to hold in solution a large quantity of carbonic acid, and, consequently, to take up a large amount of the carbonate of lime, of magnesia, of oxide of iron, and other substances which are otherwise insoluble; while, on the other hand, an elevated temperature exalts the active powers of the waters, and renders them more stimulant, sometimes to such a degree that it is necessary to deprive them of part of their heat by previous cooling, especially if they are administered to sensitive persons. It is not, however, my object in this place to consider fully the temperature of the spas in all its bearings upon their composition, their physiological effects, and their therapeutical properties, nor to discuss the various theories which have from time to time been put forward by philosophers concerning the cause of the heat of thermal springs. I will only make a few remarks on the oft-mooted question,—Whether the heat of certain mineral waters is identical with ordinary heat, or whether the former possesses peculiar properties? There are great authorities on both sides: as Hufeland, Rullman, Kopp, Pattissier, and others

asserted that there was a difference between the two; while Struve Bischoff, Alibert, and others denied such to be the case.

The reason for first assuming a difference between ordinary heat and that of hot springs, was the circumstance that the indifferent thermal waters, namely, such as contain scarcely any solid ingredients, were proved to possess most remarkable curative properties, which did not belong to ordinary water of the same temperature. From this it was concluded that, until physics and chemistry should show other causes to account for these effects, the peculiar kind of heat possessed by the spas must be considered the cause of their therapeutical powers. This opinion seemed to be the more plausible, as certain experiments which were made on the nature of thermal heat went far to prove that there was indeed such a difference.

On going back to the sources, it appears that Paracelsus was the first to originate the theory of a heat peculiar to mineral waters. But it was especially Duclos, physician to Louis XIV., who first analyzed the more important mineral springs of France, who supported such theories. He stated, as the result of his experiments on this subject, that hot spas did not burn the mouth and tongue in the same degree as water heated by fire; that mineral water had not the same action upon certain delicate substances as common hot water; that sorrel-leaves, for instance, which became soft, and were easily cooked in ordinary warm water, did not soften in the thermal waters of Néry-en-Bourbonnais, which were the hottest in France, but, if put in it, became yellow, like dead leaves. Another remarkable circumstance maintained was, that the thermal waters were hotter at night than in the day, and that they lost their heat more slowly than water heated by fire, if they were exposed to the air at a distance from the springs. Finally, that it took just as much time to make hot mineral water boil as ordinary cold water. The explanations which Duclos gave of these phenomena, are, as might be expected, quite untenable; thus, for instance, he thought that thermal waters did not boil quicker than common cold water, because the fire had first to expel the hot vapours mixed up with them before they could boil. However, as Duclos wrote in 1675, we must not too severely criticize such explanations, as they were quite consistent with the then state of physical science. But the same tribute cannot be paid to certain modern writers, who, in their anxiety to maintain the mysterious character formerly attributed to mineral springs, have disregarded the most obvious physical laws by which all phenomena connected with the temperature of mineral waters may be satisfactorily explained.

In conducting experiments on the heat of the thermal springs, several points ought to be borne in mind. In the first instance, we must reflect that, if hot water is allowed to cool in a vessel, it is influenced by conduction. If the water be contained in an open vessel, the heat is conducted immediately to the air above; but below, and at the sides, it is first conducted to the supports of the

vessel, and from thence into the air. The vessel and its supports remain as they are, and, so far as they are concerned, it depends upon the power of conduction possessed by the substance of which they consist, and upon their greater or less thickness, whether the cooling will proceed slowly or rapidly. If the vessel is of thick wood or glass, it will take more time to cool; but if it is of thin metal, it will cool rapidly, although the temperature of the vessels and their contents may originally have been quite identical. It has been considered as proof of the different nature of ordinary and thermal heat, that in Gastein, where the springs used for bathing have a temperature varying from 100° to 118° F., it is necessary that such water as is to be used in the morning should be introduced into the bathing tubs the evening before so as to have time to cool sufficiently. This seems, at first sight, extraordinary; but we must cease to wonder at it, when we reflect that the water there is surrounded by very bad conductors, and that a large quantity of water enclosed in a stone bath can give off very little caloric, especially as water of the above temperature is constantly in the bath-rooms during the whole season, so that the heat of the water can only be very slowly lost.

Liquids lose their heat more or less rapidly, according to whether the conductors remain stationary or not. Air, of itself, is a very bad conductor of heat; but as it is in perpetual motion, its power of conduction is thereby increased, the heated strata being continually carried upwards and succeeded by colder ones. If this movement is increased by other accidental disturbances of equilibrium, the cooling of the liquid will be still further accelerated.

Another influence which operates upon the temperature of liquids is radiation, to which all bodies are subject. The power of radiation greatly depends upon the colour and the surface of a liquid, of the vessel and its surroundings. It is greater in dark bodies than in light ones; it is also greater in proportion to the extent of the surface; uneven surfaces radiate more than smooth, and thin bodies more than thick ones. Radiation is also increased by the ascending current, which continually pervades a liquid while cooling. We must further take into account the influence of evaporation, which is very different, according to the extent of surface exposed, and the direction in which the vapours are carried off.

Such are a few of the difficulties which beset the experimenter if he wishes to compare the cooling of identical liquids, there being in that case no difference according to the specific heat of substances, that is, the quantity of caloric which they contain, according to their nature, at a certain degree of temperature. The specific heat is the same in identical liquids, but different in all different bodies; and water is cooled differently according to the quality and quantity of solid and gaseous ingredients it contains. It is therefore not to be expected that ordinary water should cool in the same way as a mineral water. The cooling of water is considerably retarded if it

contains salines in solution, by which the evaporation is diminished, the boiling-point becomes higher, and the freezing-point lower. On the other hand, salt-water is a better conductor of heat than ordinary water, and thus the relations become very complicated.

It has also been adduced as a proof of the peculiarity of heat possessed by certain thermal waters, that their boiling-point was lower than that of ordinary water. Thus the water of Gastein boils not at 212° , but at 207.5° . But as Gastein is situated 3000 feet above the level of the sea, it is only natural that water should there boil at a lower temperature than it does on the plain, as the boiling-point always becomes lower in proportion to the diminution of atmospheric pressure; and Von Gräfe has shown that there was in this respect not the slightest difference between water taken from a common spring at Gastein and the thermal waters there. From all this it must be evident that we are justified in entirely rejecting the experiments by Dr Ritter, Scheitlin, and others, which were made without due regard to the circumstances alluded to, and which were thought to prove that thermal heat had a character of its own; while other experiments leave no doubt as to the non-existence of any fundamental difference between the two kinds of heat.

In conclusion, a few words may be said on the relation of the temperature of mineral waters to their specific gravity, as on this subject also most erroneous theories have been brought forward. The specific gravity of a water depends partly upon the solid ingredients contained in it, and partly upon its temperature. For this reason distilled water has a smaller specific gravity than water containing salines, provided both are of the same temperature. But as the density of water is greatest at 39° , and as it expands when it is above or below that degree of temperature, its specific gravity must become diminished in proportion as the water becomes hotter or colder. And it may therefore happen that a thermal water, which contains a small amount of salines, and has a comparatively high temperature, may have a smaller specific gravity than distilled water, which, although it does not contain any foreign ingredients, is of a lower temperature. This is actually the case with the waters of Gastein, the specific gravity of which varies from 0.990 to 0.985, and with the waters of Nocera, in the Papal dominions, in which it is 0.996, that of distilled waters at 32° being assumed = 1. M. Streintz has used this apparently extraordinary circumstance for attributing to thermal waters a character of their own, and which was entirely different from that of ordinary water.¹ It must, however, be evident from the foregoing remarks, that such a conclusion is by no means justified by the facts of the case. If one cubic centimetre of water weighs one gramme at 32° , it weighs 0.999 gr. at 50° , 0.998 at 68° , and 0.995 at 86° . It is, therefore, not surprising that the water of Gastein, the temperature of which, in the different springs of the place, rises from 95° to 118° , should have a specific

¹ Les Bains de Gastein, p. 45.

gravity varying from 0·990 to 0·985. On the contrary this is what would be naturally expected, and would be the case with any water of the same temperature, and therefore furnishes no reason whatever for assuming the specific gravity of thermal waters to be ruled by laws different from those which obtain for ordinary and distilled water.

18 BRYANSTON STREET, LONDON.

ARTICLE V.—*Some Remarks on the Treatment of Scalds and Burns.*
By JOHN YOUNG MYRTLE, M.D., F.R.C.P.E.

(Read before the Medico-Chirurgical Society of Edinburgh.)

IT is well known that, though burns and scalds are constantly coming under the notice of the surgeon, their treatment is too often a tedious and troublesome affair.

A consideration of the questionable success attending so many of the remedies usually resorted to; of the great pain inflicted on the patient, and the irritation caused to the injured parts; of the slowness of the healing process, frequently accompanied as it is by ugly ulcers, and followed by vexatious and disfiguring contractions; has induced me to bring under the notice of this Society a few simple observations on the treatment of this class of injuries, more especially as the plan I am about to recommend causes little or no pain to the patient, and is far more successful than the means commonly employed.

It is not my intention to mention or discuss the various plans adopted in the treatment of these injuries; nor do I profess to make wonderful cures of cases where the textures are seriously destroyed, and in which, should they not prove fatal, the cure is necessarily very tedious; still in cases coming short of this, a hastening of the healing process may be obtained, and the occurrence of troublesome granulations may be prevented—a desideratum by no means small under these circumstances. Neither do I mean to dwell upon the internal and constitutional treatment, but only to present a few practical observations resulting from a twelve or fifteen years' experience as to a peculiar mode of external treatment.

The two plans mainly depended upon in former times for the local treatment of scalds and burns were the sedative and the stimulating; of late the necessity of exclusion from the air has also been acknowledged.

I may at once mention that the plan I have long almost, if not altogether exclusively, put in practice, has been to use ointments, in such a form as most effectually to exclude the air, and at the same time to cool and soothe the parts; taking care, in the case of scalds, to puncture vesications when large, but then only because the pre-

sence of intervening fluid prevents the operation of the remedy, and because extensive blisters are often followed by troublesome ulcerations.

In employing the ointment plan of treatment, there is certainly nothing very novel; and the combination with sulphur may be regarded as of the same nature as the use of flour or starch made into a paste, or the Carron-oil mode of treatment. But as far as my experience has gone, sulphur seems to have almost a specific virtue in cooling and soothing the irritation of the injured part, and in removing the pain and inflammation which result from the application of heat.

When called to see a case of burn or scald, if nothing has been done, I immediately cover all the injured surface with a pretty stiff ointment, composed of simple hog's lard and flowers of sulphur, spread in the form of a good thick layer on linen cloth (which is greatly to be preferred to lint, as the latter is much more apt to adhere to surfaces deprived of their cuticle, if great care is not taken to remove the dressing), which ought always to be changed as soon as the part becomes hot and uneasy, when the sulphur is frequently found in the shape of a tolerably dry paste or crust. This crust ought to be carefully removed, and fresh dressing applied immediately, to be repeated as often as necessary. Under this simple treatment burns and scalds of a slighter character heal in two or three days; and even many cases which were wont to be tedious and troublesome under plans in common use, I find to heal kindly and speedily.

For some years after the adoption of the soothing plan in this form, combined with exclusion from the action of the air, I had the mortification to find that, when the scald had been very severe, or the cutis vera had been much injured by the burn, the cure was delayed by the occurrence of ulceration or sloughing, which I treated with the usual lotions, though too often with but tardy success. A good many years ago, in the course of a conversation with my friend Dr Stark on the treatment of burns and scalds, I acquainted him with my ointment plan, and mentioned my occasional disappointments; when he told me that he had long used another ointment, which, when applied to the injured or ulcerated parts, generally induced a healing, reparative process far more speedily than could be obtained by the washes, etc., generally employed. The ointment in question is composed of common leeks and hog's lard, in the proportion of as much hog's lard as a slice of fresh butter for the table to each leek, which, being allowed to simmer by the fire in an earthen vessel until the leeks become quite soft and tender, and being strained through muslin, on cooling forms an ointment of a lightish green colour, with a slight garlic odour. This ointment I have had many opportunities of testing, and I can confidently testify to its great value in the case of scalds where ulceration has taken place, and of burns where the cutis vera has been materially injured.

In scalds and burns of a minor character I always trust in the first instance to the sulphur ointment; but when a burn is combined with a scald, or if an ulcerated spot appears, I have the leek ointment applied to those parts without delay, and am almost never disappointed in witnessing a rapid cure with comparatively little pain to the patient. In the case of severe scalds, as soon as ulceration threatens the vesicated parts, the cuticle ought to be carefully removed with a pair of forceps and very sharp scissors, so that the leek ointment may be adopted instead of the sulphur, when an hourly improvement will probably be observed.

Without trespassing long on the patience of the Society, it may at this point be desirable to give a case or two as examples of the efficacy of this plan of treatment.

An American gentleman and his son, having charge of a department in the North British Rubber Co., carrying on their operations in the old Silk Mills near Fountainbridge, while engaged in superintending one of the processes in the preparation of varnish, were suddenly overwhelmed by a tremendous explosion, in consequence of a flue taking fire and igniting the inflammable gas arising from the varnish, whereby the roof of the building was blown off, and the window completely shattered. They both received a very serious shock, and were immediately removed to their residence in Murrayfield, while a message was at the same time sent for me. In a quarter of an hour I arrived, having taken care to bring a good supply of hog's lard and sulphur along with me. I found father and son pacing up and down the room in an agitated manner, with hair singed, eyes suffused, and the skin of the forehead, face, and neck singed black, and in several places much injured. The arms and hands were also much injured, and all the skin implicated was much inflamed. The father insisted on my attending to the son in the first place, but it was with great difficulty I could persuade the latter to sit down, as he continued pacing up and down, excited almost to madness by the shock he had sustained and the excruciating pain he endured. The dressing being completed, he became perfectly calm, and expressed himself as wonderfully relieved; and when the father had been attended to, both felt so comfortable, that the feeling of the ludicrous got the better of them, and they burst out laughing at each other's strange yellow masks—the eyes, nostrils, and mouth alone remaining uncovered.

The father was able to return to his duty on the morning of the fourth day, and in three days longer all the injured surfaces were healed. He required the leek ointment to the back of his hands for three days only.

The case of the son was much more serious; his forehead, neck, arms, and hands having been severely burned; and extensive vesication, followed by ulceration of an ugly-looking description, especially on the hands, arms, and shoulders, having taken place, the leek ointment was constantly used from the third and fourth

days until the twelfth day after the accident, when every spot was healed and he resumed his duties. Every day, from the second onwards, the ulcerated surfaces became narrowed in a most manifest degree, while by the fourth day, such surfaces as had required the sulphur only were completely healed. In this last case there was high febrile action for three days, requiring constitutional treatment of an antiphlogistic and soothing character.

The only other case I shall relate, I did not see until the Carron oil had been tried for three or four days; the subject of it was a miller, and the injury resulted from the accidental ignition of gas issuing from a broken pipe, by which the outside of the left foot and ankle was burned, and in removing the stocking the cuticle had been torn away.

When I saw him on the fourth day after the accident, I found an ugly dark ashy-looking ulcer, $2\frac{1}{2}$ inches in length, and $1\frac{1}{4}$ inch in breadth, extending upwards from the heel towards the maleolus externus, while the parts around were considerably inflamed and swollen. The leek ointment was applied to the ulcerated spot, and the sulphur ointment to the inflamed surface around, and in three days the healing process was fully established, and in other three days he resumed his employment without inconvenience.

It may be as well to mention that I did not think it necessary to apply a single poultice in any of these cases, and, indeed, I have seldom required to use them since I have been in the habit of depending upon these ointments. Poultices are only required for a few days in cases where sloughs are difficult of separation; the leek ointment answers this purpose as soon as it can be applied round the edges of the slough, promotes the separation, and is not afterwards followed by weak, troublesome granulations.

It will be observed that in the cases I have brought forward, there was a rapidity in the healing process such as we almost never observe to follow the plans in general use; and these cases are only specimens of what I have observed in many like instances.

When the reparative process is slow, and there is a troublesome ulcer, with unmanageable granulations constantly springing up, we may apprehend an unseemly cicatrix; in the cases mentioned above, owing to the celerity of the cure, and the entire absence of granulations, save of a small, healthy character, the appearance of the parts soon became perfectly healthy; nothing worthy of the name of a cicatrix remained after a few weeks, and the faces of our transatlantic cousins seemed all the fairer for the ordeal they had gone through.

I have also constantly used the sulphur ointment in cases of small-pox; and, when carefully and constantly applied, it has never failed to afford relief, and has almost entirely prevented pitting; indeed, so far as I have used it, I may say that I have not had a single case of disfigurement, even in cases of natural small-pox in adults. Its use also in the painful and troublesome excoriations of

children is equally effectual and soothing. As to the leek ointment, it is as well to mention that I have frequently found it very serviceable in foul indolent ulcers, and also in gangrenous bed sores, an instance of which may be mentioned in the case of a patient I attended for my friend Dr Peddie, in which there was hopeless disease of the heart, kidneys, etc., accompanied with general dropsy. When I saw her on the 9th of September last, I found gangrenous inflammation of both lower limbs, extending from a little below the knee to the instep in the one leg, and to within two inches of the ankle on the other, each patch being fully two inches broad. A poultice was applied for a few days until the separation was fully established, the leek ointment was extensively applied, and though the lady died before the end of the month, the sloughs had not only come away, but the sores were rapidly contracting, and were in a wonderfully healthy condition. In a more favourable case I am confident the best result might be expected, and troublesome granulations, such as generally accompany the continued use of poultices, might be in a great measure prevented.

In conclusion, it may be thought by some that so simple a plan was scarcely worthy of being brought under the notice of our Society, and its simplicity may be the very reason of my having so long deferred bringing it forward; yet, if it is simple, it is also safe, very grateful to the patient, and as far as my observation has hitherto gone, I have had good cause to trust to its efficacy. I wish my professional brethren in hospital and elsewhere, who may have better opportunities than I have of treating such cases, to give a fair trial to the plan, and I trust they may find it as great a comfort as I have done, and be able to give as good a report regarding it.

ARTICLE VI.—*Case of Punctured Wound of the Brain—Recovery.*
By P. W. MACLAREN, M.D., L.R.C.S.E., Lasswade.

SEVERE cerebral injuries resemble herniæ in this respect, that each possesses an individual character necessitating modifications in the general plan of treatment. In punctured wounds of the brain, the site and extent of the lesion, the mode of infliction, the state of the fractured cranium, but, above all, the age of the patient, influence the surgeon in determining his choice of remedial agents and framing his prognosis.

It is in order to illustrate the importance of this last element in examples of the above class of head injuries, that I venture to lay before the profession the following case:—

On Sunday morning, May 26, 1861, while in attendance upon a *puerpera*, a boy brought me information that a child, aged two years, had fallen and received a cut on the head. Thinking that the injury was probably a trivial one, and being unable to leave my

patient, I directed the messenger to get the hair around the wound cut away, and cold-water cloths applied, and if that did not check the bleeding, to bring the child to me.

In the afternoon, Dr Smith visited the child, and learned the following particulars:—About 9 A.M. he had fallen backwards, striking his head against the pointed extremity of a thin narrow bar of iron, which had penetrated nearly two inches. Soon after, the child began to vomit, and continued to do so at intervals. The bowels, also, were opened naturally. The child was quite sensible, and exhibited none of the symptoms of paralysis. On the cloths applied to the wound small portions of brain tissue were observed. Dr Smith ordered the hair to be cut short, and a mustard poultice to be applied to the abdomen.

At 10 P.M. I found the child sleeping restlessly, being aroused frequently by the desire to vomit. The pulse was 104, full. The pupils were rather contracted. No other symptoms of cerebral irritation existed. The bowels had again been moved. About an inch below the occipital protuberance, and a little to the left of the mesial line, a wound half-an-inch long, with clean cut edges, marked the entrance point of the iron spike. A little blood stained the cloths, on which I also detected a portion of brain tissue, nearly the size of a pea. Ordered to apply to the head a bladder containing pounded ice.

May 27th.—Since 3 A.M. the vomiting has ceased, and the child has eaten a biscuit to breakfast. Pulse 112. Pupils natural. No cerebral symptoms. Wound is now filled up with coagulum. Ordered three grains of calomel, to be followed by a dessert-spoonful of fluid extract of senna.

May 28th.—I found the patient sitting on his mother's knee eating porridge. The bowels had not been moved, and the senna was ordered to be repeated. He had slept well during the night. No recurrence of vomiting. Pulse 100, full.

Vespere.—Bowels slightly moved. For an hour or two in the afternoon he had been very querulous. Now (8 P.M.) he sleeps very heavily, with stertorous breathing. Pupils large, but contractile. Pulse 84, laboured. Ordered a leech to be applied to each mastoid process, and an enema administered.

May 29th.—The latter injunction was not carried into effect, and the bowels have not been opened. The leeches bled well, and the patient slept softly the greater part of the night. This morning he looks lively and cheerful. Pulse 100, soft. Wound quite healthy. Enema again ordered.

May 31st.—Yesterday the bowels were freely moved, and this morning I found my patient dressed, and walking about the room. No bad symptoms existed. Ordered to discontinue ice-bladder, and have the wound dressed with lint and gutta-percha. With no other application, the wound healed completely on the 4th June.

Remarks.—The wound, it will have been observed, was situated at a part commonly accounted the least dangerous; but the depth

to which the spike had penetrated was great, and the direction it had most probably taken was upwards and forwards towards the tentorium cerebelli. Fortunately the foreign body was clean; and although, from its bulging form, its removal was effected with difficulty, still it was effected thoroughly. The first point to be ascertained was the condition of the fractured occipital bone, for on the solution of this question the propriety of local interference depended. In other words, was the fracture attended with splintering of the internal table?—and if so, would the application of the trephine tend to improve the patient's condition? The symptoms were quite inadequate to elucidate this, and the use of the probe was likely to inflict farther mischief. But taking into consideration the fact, that in patients of so tender an age the individual elements of the occipital bone still remained distinct, that in these separate parts ossification was very imperfect, and that their texture was comparatively soft and elastic, it became highly probable that penetration had occurred uncomplicated with splintering. It was certain, also, that depression did not exist. Accordingly, it was deemed more judicious to defer operative procedures, and in the meantime trust to general antiphlogistics. In his Commentaries on Surgery, Mr Guthrie advocates this course as the rule of practice to be adopted in the case of young persons. "By far the greater number of cases," he says, "in which recovery has taken place after fracture and depression of the skull, with injury of the brain, and even loss of its substance, have occurred in children, or persons under the adult age. Greater reliance may therefore be placed on the powers of nature in them, and less frequent recourse may be had to the aid of operative surgery in order to prevent mischief, than in older persons, even when the bone is fractured as well as depressed."

This apathetic behaviour of the young brain under mechanical injuries is a fact often presented to the observer, and stands out in strong contrast to its irritability and inflammatory tendencies when incited by indirect or sympathetic causes. The young cranium, with its open fontanelles, ununited sutures, and imperfectly ossified elements, possesses a capability of quick expansion which greatly lessens the dangers of congestion and effusion. From these the patient did not altogether escape; for on the third day, drowsiness and stertorous breathing, with a symptom of greater significance than either of these—to wit, a pulse gradually diminishing in frequency—plainly indicated a state of compression which yielded readily to topical blood-letting.

After this the child rapidly convalesced, was perfectly recovered on the tenth day, and has ever since continued well.

It is a matter for curious reflection that in this case no impairment of the special function of the cerebellum was noticed, nor any of those symptoms—*e.g.* spasms or convulsions—which commonly betoken laceration. Vomiting is common to all kinds of cerebral injury.

ARTICLE VII.—*Contributions to the Knowledge of Osteomalacia.* By Dr C. C. T. LITZMANN, Ordinary Public Professor of Medicine and Midwifery, and Director of the Lying-in Institution at the University of Kiel. Translated from the German: by J. MATTHEWS DUNCAN, M.D., Lecturer on Midwifery.

(Continued from page 558.)

III. OSTEOMALACIA UNCONNECTED WITH CHILDBEARING.

AMONG the remaining 46 patients there were 35 individuals of the female and only 11 of the male sex. Of the former only 2, who became affected in advanced age, had previously been once confined; most were unmarried, none conceived while the disease lasted.

Ten were affected before the twentieth year (7 women, 3 men); 8 between the 20th and 25th year (6 women, 2 men); 5 between the 26th and 30th year (all women); 5 between the 31st and 40th year (3 women, 2 men); 3 between the 41st and 50th year (2 women, 1 man); 4 between the 61st and 70th year (3 women, 1 man); 1 between the 71st and 80th year (a woman); in 10 the time of becoming ill is not given (8 women, 2 men).

The extent of the disease was in general greater than in puerperal osteomalacia, destruction advanced more frequently, and in greater extent, to the highest degrees. In the majority of cases the bones of the lower extremities were among the parts earliest affected. In 21 cases all parts of the skeleton were diseased, and in 6 cases all the bones except those of the head.

There were mentioned as affected,—

The bones of the pelvis,	40 times
„ spine,	40 „
„ thorax,	37 „
„ lower limbs,	36 „
„ upper limbs,	30 „
„ head,	24 „

The symptoms in general corresponded with those of puerperal osteomalacia. In individual cases the pain in the beginning of the disease was remarkably slight, and increased only with the advance of the disease; in other cases the reverse occurred, and the bones which at first were painful could at a later stage be moved and bent without any sensibility, indeed, in one case even a portion of the cortex of the bone was removed without pain after incision with the knife, and an insensible fleshy or liverlike mass was laid bare in the interior of the bone (Thomson). In one patient the affection of the bones of the head was accompanied by headache and delirium, which afterwards gave place to chronic insanity (Solly).

Only in 4 cases (3 women, 1 man) was an arrest of the symptoms, amelioration, or cure observed. In 3 cases (all women) the issue is not stated. In the remaining 39 cases (29 women, 10 men)

the disease ended fatally, mostly under symptoms of slow fever, extreme exhaustion, and asphyxia. Death occurred within the 1st year in 3 patients (all women); after 2 years in 2 (women); after 2 to 3 years in 4 (2 women, 2 men); after 3 to 4 years in 6 (4 women, 2 men); after 4 to 5 years in 2 (1 woman, 1 man); after 5 to 6 years in 2 (women); after 8 years in 1 (man); after 8 to 9 years in 2 (1 woman, 1 man); after 10 years in 1 (woman); in 16 patients (13 women, 3 men) the duration of the disease is not given.

The following forms of the disease may, with some security, be distinguished according to the aetiological influences, so far as they may be discovered from the communications quoted:—

1. *Rheumatic Osteomalacia.*

Five cases (3 women, 2 men), of which 2 occurred before the 20th year (1 woman, 1 man).

Here there are mentioned as causal injurious influences: residence in cold, damp, sunless rooms, or in the open air in insufficient clothing, sleeping on a cold, damp bed, sudden wetting of the body when heated; and in part, besides these, insufficient and bad food.

The extent of the disease was very great. Only in 1 case did the bones of the head remain altogether exempt from it; in the other four the disease affected all the bones of the skeleton. Improvement was noticed in only 1 case; the remaining 4 ended fatally, after the destruction had partly reached the highest degree.

2. *Syphilitic Osteomalacia.*

Six cases (3 women, 3 men), of whom one (a woman) was affected before the 20th year.

The patients had, before the commencement of the bone disease, suffered from syphilis for a longer or shorter time; had, in part, used mercury, and had lived in the most unfavourable conditions, in cold, damp, ill-ventilated houses.

In 3 cases the disease extended over all parts of the skeleton; in 2 cases the bones of the head, and in 1 case the bones of the upper extremity remained exempt from it. All the cases proved fatal. Post-mortem examination showed in all a far-advanced destruction of the bone tissue.

3. *Senile Osteomalacia.*

Five cases (4 women, 1 man).

The patients were from 60 to 80 years of age. The disease showed itself, as usual, with more or less acute pains, loss of power of motion, etc. Death occurred after the disease had lasted from 2 to 6 years. The bones of the trunk were in every case affected. In 1 case the disease had, in addition, attacked the bones of the extremities, in another the bones of the head, and in 2 cases every part of the skeleton was affected. The diseased bones were mostly characterized by increase of blood in them. They were osteoporotic

in a high degree, yet the rarefied tissue was still generally covered by a thin bony cortex.

4. *Neurotic Osteomalacia* (Virchow).

Six cases (4 women, 2 men), of whom 3 were affected before the 20th year (2 women, 1 man).

Here the disease evidently became developed in consequence of profound lesions of the central organs of the nervous system. One of the patients had suffered for years from insanity, another from chronic hydrocephalus, which was produced by a fall on the head at two years of age; the other 4 were of weak intellects, and of these 2 had had continued convulsions in early childhood.

The remaining statements are very incomplete. The bones of the trunk appear in all the cases to have been diseased, while the bones of the extremities, even of the lower, and of the head, were not always affected. The changes also of texture were apparently less far advanced than in the previously named forms.

As being closely allied, there probably should be included here the cases of C. Schmidt and of Macintyre. The former, as has been already stated, related to a woman of 22 years of age, who became ill in consequence of a profound affection of the mind, and died nine months afterwards; the bones only of the lower extremities and of the pelvis were affected. Macintyre's patient was a merchant, 43 years of age, who, overtaken by excitement of mind and temper, labour and sorrow, became exhausted. He died after the disease had lasted 3 years. The lesion was confined to the bones of the trunk.

In the remaining 22 cases the ætiological influences are either not given at all, or the statements on this head are so deficient and imperfect that no conclusion respecting them can be arrived at.

CASE.

Frau St. in H., 35 years of age, had ten years ago borne a child for the first time. During pregnancy she had complained of dragging pains in the right thigh. Labour was natural, and terminated within eight hours; only the expulsion of the child was a little delayed by the large size of the head.

After the end of five quarters of a year she was pregnant for a second time. From this pregnancy she reckoned the beginning of her disease. She suffered much from dragging pains in the back and in the limbs, and for the first time she perceived that her stature diminished. Different modes of treatment were adopted without result. Labour terminated easily and quickly. Both children are alive.

During the childbed the morbid process evidently made rapid progress. Only for a few weeks could the patient look after her household duties; the pains increased, the spinal column became

more and more bent, progression soon became impossible, and she was forced to sit or lie by turns.

While in this condition she again became pregnant before the end of six years. It remains a question whether or not the pelvis had already become contracted in the previous pregnancy. At the commencement of this pregnancy, according to the declaration of the husband, the proportions as to roominess were about the same as formerly. The child presented the feet during labour. The midwife could not succeed in delivering the head. A physician who was called in (and who has since died) did not come till after several hours had passed, and completed delivery without having recourse to instruments. The child was, of course, dead. At the ear and back of the nose only were traces of bruising observed. Probably the bones of the pelvis were separated from one another by the child.

The lying-in woman made a tedious recovery. Under the use of cod-liver oil, of a full diet, of Bavarian beer, and such like, with exposure as much as possible in the open air, the disease appeared to be arrested. The pains disappeared, and in more recent years she could even walk short distances without crutches. No attention was paid to the condition of the urine during the whole of the disease.

About the end of July last year, menstruation re-appeared for the last time, and soon symptoms of a new pregnancy made their appearance. At the beginning of December the mother felt the first movements of the child. The affections that had formerly occurred did not, however, return. With the exception of slight pains in the stomach, from which she had suffered for a long time, her health continued undisturbed, and, in consequence, she looked forward with confidence to the approaching labour.

On the 4th April 1857, about four weeks before the normal end of pregnancy, I saw this pregnant woman for the first time. Originally of high stature, she had now collapsed to the extent of a head and more, in consequence of the curvature and sinking of the vertebral column. Her face was of a slightly livid colour. The development of the muscles, as well as of the subcutaneous adipose tissue must always have been only slight. I found in the upper dorsal region a considerable posterior curvature (Kyphoscoliosis), with the convexity to the right, which, in the lumbar region, was counterbalanced by an anterior curvature (Lordoscoliosis) with the convexity to the left. The bones of the lower extremities were straight and relatively long, the ankles clumsy. The uterus projected so far forwards over the pubic bones, that it lay entirely in front of the anterior iliac spines; in sitting it rested between the thighs, and its long axis made an angle with the axis of the pelvis. When I raised it with the hands I could recognise through its thin walls a large round part of the child, the head, above the left horizontal branch of the pubes, and in the fundus on the right side the feet of the child. The sacrum appeared to be

very much curved backwards beneath the driven-in lumbar region; the alæ of the ilia were folded, like a channel, from before backwards; the distance between the anterior superior spinous processes of the ilia measured 10 inches, the greatest distance of the cristæ, 11 inches; the external conjugate could not be measured in the standing position on account of the pendulous belly. The opening of the pelvic outlet was directed backwards, the arch of the pubes greatly narrowed, the two limbs of it being, at the narrowest point in the neighbourhood of the pubo-ischiatic synostosis, so approximated to each other, that I could only push the point of the index finger between them; above this contraction the interval became so widened as to permit the penetration of the finger, as was also the case posteriorly between the ischiatic tuberosities. I felt how the anterior wall of the pelvis was pointed forwards beak-like, the sacrum bent upon itself, and its promontory pushed down along with the lower lumbar vertebræ into the pelvis. There was only the interval of a finger's-breadth left between the point above the left acetabulum and the lumbar spine lying opposite to it and above it. I could reach neither the os uteri nor any presenting part of the child. The bones of the pelvis were not tender on pressure, and showed throughout no flexibility, although both husband and wife thought they had remarked that the degree of narrowing was not always the same.

Already, in the last days of April, she had a return of dragging pains in the region of the sacrum. These feelings were more acute on the evening of the 30th April, and on the 1st of May, at one o'clock in the morning the liquor amnii flowed away with the first stronger pains. A telegraphic despatch to call me to the case was unfortunately so delayed that I only arrived at the house of the patient, accompanied by some of my colleagues, at half-past two o'clock in the morning. The pains had in the interval gradually increased to such an intensity, that the house-physician, who was in attendance, was several times induced to give the parturient woman opium, from fear of the occurrence of rupture of the uterus. She had already, in the previous evening, been warned by her husband of the necessity of cesarian section, and willingly gave her consent to it. I found her perfectly collected and prepared. She appeared much heated, the skin covered with sweat, the pulse only slightly accelerated, the thirst not great, the uterus only slightly painful. It appeared still to contain a small quantity of liquor amnii. The position of the fœtus was not changed; on the right side, towards which she lay with the back turned, I heard the foetal pulse loud and distinct. On making an internal examination, neither os uteri nor any part of the child could be reached, as was formerly the case; in the pelvic bones there could not even now be detected the slightest yielding to pressure.

The patient was now, with a view to the operation, laid upon a table opposite a window, in an almost horizontal position, with the legs

hanging down, and the feet supported by stools. The rectum was evacuated by a clyster; the catheter when introduced found the bladder empty. It cost some trouble to rectify the forcibly pendulous uterus, and in the attempt the bowels were pushed from the sides obliquely above the pubic bones forwards between the uterus and the anterior abdominal wall, and in spite of all exertions, by stroking, they could not be pushed back again completely. On this account, one of the assisting physicians, standing in front of the patient, encircling the uterus below with both hands, supported it, partly in order to fix it, partly to repress the intestines in that situation, at the same time that two others, standing at either side, kept it supported above. After the patient was chloroformed, I proceeded to the operation, standing on the woman's right side. By one incision in the linea alba, beginning a little to the left of the navel, and ending about an inch and a half above the pubic symphysis, the abdominal walls were divided. From their extreme thinness, I could not prevent the knife, in its second sweep, although carefully made, from penetrating slightly the uterine parenchyma, as I at once recognised by the movability of the integuments over the smooth reddish-white peritoneal covering of the uterus, as well as by the spouting of a small artery. After the bleeding of this vessel was quickly stopped by torsion, I completed the incision. A small quantity of serum flowed from the open peritoneal cavity. The uterus pushed strongly forwards through the wound in the belly, and could only be kept back with difficulty. The cutting through of its wall, which was nearly an inch thick, at the upper angle of the wound, was accompanied by only moderate bleeding. At the bottom of the wound I saw and felt the yet uninjured placenta, raised it easily with the finger, and without much increasing the bleeding, as far as its lower border, and then completed the section downwards through the strongly resisting and slightly bleeding tissue, while at the same time the uterus contracted. Already during the incision the placenta was completely expelled above my hand through the upper angle of the wound; a hip of the child followed, and as I laid aside the knife, the child had already half-emerged through the wound. The releasing of the arms caused no difficulty, but then the uterus held the neck of the child so tightly encircled, that I found it necessary to enlarge the wound downwards; and even then it required some considerable exertion of strength to deliver the head. The child, a female, gave at first only slight signs of life, but completely recovered after its nose, mouth, and pharynx were freed of blood clots, and after resuscitating measures were set about in the warm bath. Before the completion of the uterine section, the assisting physicians had already on both sides, with their fingers hooked and placed in the upper angle of the wound, secured the uterus to the abdominal wall, and held it firmly. The bowels, which after the extraction of the child advanced forwards on every side, and especially

from below, were pretty easily replaced, the bleeding was stopped by the sprinkling of cold water, and thereupon the uterus contracted well. After a quarter of an hour the external wound was united by means of the interrupted suture (Knopfnath). On account of the great relaxation of the abdominal walls, there were placed some superficial stitches, involving only the skin, between the principal sutures which included the peritoneum. During the operation the patient awoke from the narcotism. She had a calm expression, and soon inquired for her child. Later, a feeling of faintness came on, accompanied by retching. After she was properly cleaned, she was carefully carried to bed; to support the sutures, strips of gold-beaters' skin, spread with isinglass, were placed between the points, and the whole covered with a binder. Till the arrival of ice, the belly was covered with compresses, wetted in cold water, which were renewed every three or four minutes. When I left the patient, after an hour and a half, her condition could be called satisfactory under the circumstances. She had little pain, no nausea, the pulse was slightly accelerated, the compresses not very bloody on being changed.

In the first days after the operation, the accounts of the patient's condition were quite satisfactory. The fever was moderate, the belly little painful, the sleep tolerably calm, a rather considerable quantity of blood was excreted from the vagina, the discharge from the wound was slight. But in the third night fits of nausea began, with eructations and vomiting, the belly became distended and tender, the pulse small and quick, she vomited repeatedly, the meteorismus increased, the strength diminished more and more, and death ensued at the end of the fourth day, after a considerable bleeding from the wound had taken place.

At the sectio, only a look into the abdominal cavity was permitted. A large quantity of blood had flowed from the wound. Its edges had united downwards from the upper end for one inch and a half: in the middle of the incision, a small part of the omentum was protruded between the stitches; it was somewhat thickened, but not mortified. Higher up, the omentum was seen to be adhering to the peritoneum of the abdominal wall. After opening the wound, a considerable quantity of blood was evacuated, and no small number of blood-clots were found in the cavity of the belly. The peritoneal covering of the intestines exhibited scarcely any injection; only between the highest loops of small intestine and the descending colon some slight adhesions were seen; nowhere any pus or sanies. The uterus, which was of the size of a child's head, well contracted, and lying entirely above the small pelvis, showed no signs of inflammation of its peritoneal covering. The incised wound, which stretched downwards from the fundus for a distance of from three to four inches, gaped greatly outwards, so that while its inner borders almost touched one another, the outer were separated to a distance of from one and a half to two

inches. The surfaces of the wound appeared dark, but their tissues were neither purulent nor softened. The mucous membrane of the uterus appeared quite smooth and normal, except in the neighbourhood of the wound (the site of insertion of the placenta). The cause of death was evidently not the slight peritonitis, but must be sought in the exhaustion produced by the previous disease, the operative interference after a considerable duration of painful labour, and the secondary hæmorrhage.

(*To be continued.*)

Part Second.

REVIEWS.

Observations in Clinical Surgery. By JAMES SYME, Professor of Clinical Surgery in the University of Edinburgh. Edinburgh: Edmonston & Douglas: 1861. Pp. 217.

OF the numerous works which, in the present day, issue from the medical press, a large proportion is written, not with the view of promoting the science or improving the practice of medicine and surgery, but with the simple object of advertising the names and qualifications of their authors. An aspirant for fame, instead of setting humbly to work and picking up the crumbs he can collect from nature's great storehouse, with the sure confidence that however trifling the results of his labours may appear, they will at least possess the value of having been conscientiously striven for, and honestly come by, too often proceeds to work in one or other of two ways: either he collects together and publishes a number of cases, illustrative of no point in particular either of doctrine or of practice,—or he selects some subject as his speciality, and multiplies publications concerning it, regardless that each fresh treatise is no more than a *rechauffé* of the sufficiently meagre original; quite contented in either case if he can keep his name constantly before the public. Genuine books are the exceptions: the majority of medical books come under one or other of the above categories. The volume, whose title forms the heading of the present article, is, like every other work of Professor Syme's, a genuine production, and is therefore on this account alone to be received with thankfulness and treated with all respect.

But in order that a book may be valuable, it is not enough that the motives of the author in writing it have been of the most worthy description, the work itself must contain something of real

sterling merit. It unfortunately happens that too many of the chiefs of our science, when they have attained the honours and emoluments of their profession, are contented to rest upon their oars; satisfied with giving to their own patients, and to those they may meet in consultation, the benefits of their superior skill, they too rarely communicate to their junior brethren the results of an enlightened experience, which are above everything valuable. A man may work with the scalpel and the microscope until all the changes produced by disease are familiar to him; he may study diagnosis with the most minute precision, mastering every detail, and ascertaining the value of every physical sign; he may study therapeutics until he knows the exact action of every article of the pharmacopœia; and yet, after all this, he may not succeed as a practitioner, and be unfit to be a teacher. It is only after half a lifetime has been spent amid the responsibilities of hospital or private practice, and then only in the case of the gifted minds, that that highest degree of skill is acquired which makes diagnosis appear intuitive, and invests the commonest drugs and appliances with an unknown and hitherto unexpected value. The writings of men of this stamp, though unhappily too rarely met with, are invaluable; they cannot, indeed, invest the reader with the mantle of the writer—they may not even appear to communicate so much mere information as some might have expected—but they constitute the surest guides, especially to the junior practitioner, too apt to be dazzled by the false lustre of brilliant but unsound innovations, in keeping before him what should always be his guiding star—the calm and clear light of medical and surgical PRINCIPLE.

These remarks have been suggested by a perusal of "The Observations in Clinical Surgery" of Professor Syme. Mr Syme has for many years held the first surgical position in Scotland, we may say with truth, in the kingdom. For whether we consider the improvements he has introduced into surgery, the entire confidence with which he has inspired his professional brethren, or the enthusiasm with which his lectures are listened to by the largest clinical classes in the country, there is no one in the present day, either at home or on the continent, who has attained to equal eminence. And it is indeed refreshing to find such a man, after more than a generation has passed away, pursuing his profession with undiminished vigour, and inculcating the same principles which he taught within the walls of Minto House, before he had obtained the professorship which for nearly thirty years he has adorned.

A striking feature in the present volume is the constant reference to fundamental principles; the cases are not recorded for their own sakes, every one is designed to determine and illustrate the value of practical principles. This is the great peculiarity, and one of the highest merits of Mr Syme's publications and of his teaching. Other surgeons may be as dexterous operators, and may have

attained to great skill in diagnosis, but we know of no one who so constantly keeps before his own mind, and so unfailingly impresses upon his pupils those great principles which render surgery a scientific pursuit. Hence it is that, even after a lapse of years, Mr Syme has so seldom been compelled to change his line of treatment, or to modify the operations he has devised. Thus it is that the amputation at the ankle, as performed in 1842, is still found to be the best method; though numerous modifications and so-called "improvements" have been proposed, the original mode of procedure is still found the most convenient.

It is for the same reason that in the course of difficult operations Mr Syme is never unprepared. Some of those recorded in this volume are amongst the most arduous in surgery, and calculated to test in the highest degree the resources and the presence of mind of the performer. But Mr Syme is never at fault; something unforeseen or unexpected may occur, but its import is at once understood, and the contingency provided for.

There is a peculiar necessity in our own day for the promulgation of sound surgical doctrine, for, to quote Mr Syme's words, "at no period in the history of surgery has there been so much occasion for information of this kind as at present, since the profusion of vague and verbose compilations, together with the mass of crude speculation and reckless misrepresentation with which the medical press has of late years teemed, have so bewildered the minds of most men as to render them incapable of discriminating between the good and evil of what they read."

The professor of a science has a double duty to perform; he must not only teach truth, he must expose error. The latter is generally the more unpleasing task of the two, but no one has on that account a right to shrink from it. Mr Syme acknowledges no authorities but science and experience, and in animadverting on those who differ from him, though his pen is as keen and trenchant as the "narrow straight bistoury" with which some of his operations are performed, he tests his own and his adversaries' opinions by these unerring standards. No one has met with more opposition than himself, and not merely opposition dependent on defective knowledge or on prejudice, but too often accompanied with wilful and systematic misrepresentation. For his bold exposure of error, no matter in how high places it may have ensconced itself, we respect and honour him; for we feel that the good he has done in sweeping away the cobwebs of an antiquated system, or in unmasking the pretensions of ignorant innovators, is hardly inferior to the positive benefits he has conferred on surgery, by establishing sound principle, and introducing real improvements.

It is not our intention either to write a criticism or to give a complete abstract of "The Observations on Clinical Surgery;" we shall merely give an outline of the general character of the work, trusting that our readers will study it for themselves,

being well assured that every line in it is worthy of their careful consideration.

The volume comprises thirty-five sections or chapters, which treat of as many departments of practical and pathological surgery. The first five sections are devoted to diseases and injuries of bones. They are headed respectively—"Fracture of the Thigh-Bone;" "Disease of the Hip-Joint;" "Ununited Fracture of the Humerus;" "The Formation of New Bone in Necrosis, and Compound Fracture;" "Tumour of the Os Humeri removed without Amputation." Under the first head Mr Syme maintains that in the treatment of fracture of the thigh-bone extension is unnecessary, and that the advantage of Desault's long splint consists in restraining the movements of all the articulations of the limb. In the second chapter, disease of the hip-joint, so long believed to be a most formidable and generally incurable complaint, is shown to be most amenable to treatment, and that of the simplest kind: this consists in rest, enforced by the application of the long splint, and in a careful regulation of the general health. No counter-irritation is to be employed, and "nothing can be more preposterous than the common practice of administering iodine and mercury in such cases, or on other occasions when a strumous constitution is suspected." The question of the propriety of excising the head of the thigh-bone is thus felicitously disposed of: "It appears from the books published in London and elsewhere, and also from the cases which not unfrequently come under my observation, that this salutary reformation has not yet become general, and hence probably the reason of so many operations performed on the southern side of the Tweed for removing the head of the thigh-bone, which, even if we had the wish to do so, there would be little opportunity of repeating here."

Amputation at the ankle, and excision of the elbow-joint are, in a peculiar manner, Mr Syme's operations, and no surgeon should perform either of them without referring for instruction to the original source. For it appears that even after eighteen years, a correct account of the former operation has not yet found its way into all the manuals. "The surgeon of a large hospital told me," says Mr Syme, "that having heard of amputation at the ankle, he had performed the operation repeatedly, according to the directions of a London Surgical Manual, with the invariable result of sloughing, but that then being advised by a friend to look into my own book, he had altered the procedure with constant success."

Four chapters are devoted to diseases of the rectum, under the following heads:—"Spasmodic Stricture and Fissure of the Anus;" "Fistula in Ano;" "Internal Hæmorrhoids and Prolapsus Ani;" "Hæmorrhage from the Rectum." It is shown in the first that the distressing complaint in question may be removed by a very simple operation, all that is required being to convert the fissure into a simple incision; in the second, that in the treatment of fistula, it is only necessary to pass a sharp knife along the canal, and bring its

point out at the anus, and by a single sharp stroke divide the intermediate parts; in the third, that in operating upon internal hæmorrhoids, complete strangulation by the ligature should be at once effected; and in the fourth, that external piles are sometimes the cause of severe and exhausting hæmorrhage from the bowel. In all these chapters the principles of treatment are most clearly stated by the writer, and appear to us to be altogether unassailable; but it is wonderful, and even incredible, that although the same doctrines have been for many years maintained by Mr Syme, so much ignorance on these subjects should still prevail among the medical profession.

"The actual cautery" is a most valuable remedy in those cases of diseases of the joints which are dependent on ulceration of the cartilages, and which are characterized by intense pain, aggravated by pressure or motion, and most severe during the night. The cautery must not be applied indiscriminately, for many cases of diseased joints would be much aggravated by it; as, for instance, most cases of disease of the hip-joint, where the morbid action appears to begin not in the cartilages or synovial membrane, but in the bone itself.

Passing over several interesting chapters, we come to diseases and injuries of the arteries, which are treated of in five sections: "Axillary Aneurism;" "Aneurism of the Common Carotid Artery;" "Ligature of the Common Carotid for an Aneurismal Tumour of the Orbit;" "Ligature of the Internal Iliac Artery;" "Gluteal Aneurism."

The chapter on axillary aneurism is peculiarly important. It has always been stated as one of the great advantages of the Hunterian operation for aneurism, that by means of it the surgeon can tie the vessel at a distance from the disease, and at a point where it may reasonably be expected to be healthy, instead of being obliged to apply the ligature close to the sac, where the coats of the artery are certain to be unsound. Mr Syme, however, demurs to this doctrine; he looks upon aneurism as so far a local disease, that it in almost all cases results from a local injury, which stretches or bruises the coats at a particular point of their extent. Accordingly, in selecting the site for the application of the ligature, Mr Syme is guided by the facility with which the vessel may be tied, rather than by any consideration as to its presumed soundness or unsoundness at a particular point. Thus, while it is right to tie the femoral artery in cases of popliteal aneurism, on account of its superficial position and the nature of its relations with the accompanying vein, Mr Syme recommends that in most cases of axillary aneurism, instead of ligaturing the subclavian, the sac should be opened into, the clots turned out, and the two orifices of the vessel secured. Two cases are recorded where this procedure was successfully put in practice.

Sensation writing is one of the characteristics of the present day,

and even in this work the reader will not fail to find most exciting matter. Not but that everything is described by Mr Syme in the most calm and unimpassioned language, but in some of the cases the danger to the patient is so great, and the responsibility to the surgeon so overwhelming, that we tremble as we read, while we have an internal feeling of satisfaction that the operator is Mr Syme. No one can read the account of the ligature of the common carotid in a case of wound of the throat, or of the tying the gluteal artery on account of an aneurism of that vessel, without feeling that the patient's life hangs upon every movement of the surgeon, or without experiencing a sensation of relief when the operation has been successfully terminated. Indeed, in reference to the former of these cases, Mr Syme, in one of the very few passages in which he alludes to his own feelings, uses these words: "Even now I cannot, without a shudder, reflect on my position, when the slightest displacement of one hand must have instantaneously caused a fatal hemorrhage from the carotid artery, and a wrong direction of the needle by the other, to the smallest possible extent, would have given issue to an irrepressible stream from the jugular vein."

The remaining chapters of the volume are no less interesting than those to which we have so briefly alluded, and we trust that none of our surgical readers will fail to study them for himself, for we are certain that in none of the writings of the present day will he find such sound doctrine and such enlightened practice. The difference between the impressions produced by reading such a treatise as this, and one of the ordinary compilations, is scarcely to be conceived; instead of the weariness both of the flesh and of the spirit occasioned by wading through a mass of crude and unconnected details, there is a real pleasure in perusing the writings of Professor Syme; the attention is never permitted to flag, and the reader feels that he is treated as a rational being, not as a turkey, to be crammed for the market, or as an ill-informed student, to be prepared for his examination.

We have one other observation to make. Most of the cases recorded in this volume were treated by Professor Syme during the last nine months, and the great majority in the clinical wards of the Infirmary. This simple statement will give our readers at a distance some idea of the opportunities for surgical observation enjoyed by the pupils of this school. The Royal Infirmary is an hospital not merely for Edinburgh, but for a far wider sphere; and the well-earned fame of Professor Syme is sufficient to bring to it patients not only from the remotest districts of Scotland, but from many parts of England.

We cordially bid Professor Syme farewell, or rather we say to him *au revoir*, for we trust soon to see the additional volume promised us in his preface.

The Roll of the Royal College of Physicians of London ; compiled from the Annals of the College, and from other authentic sources.
By WILLIAM MUNK, M.D., etc., etc. Vol. II. 1701 to 1800.
London : Longmans : 1861. Pp. 429.

WE had recently the opportunity of laying before our readers a notice of the first volume of Dr Munk's interesting publication, and it was then a duty, as it was a gratification to us, to express a favourable opinion of its contents. The present volume, bringing down the annals of the London Royal College to the close of the eighteenth century, is not less deserving the attention of the profession than its precursor. We shall glance slightly over its pages, here and there making an addition, offering a comment, or borrowing a trait or an allusion ; yet more with the intention of inducing the reader to go and cull for himself, than with the hope of presenting any adequate notion of the varied materials that Dr Munk has stored for our entertainment and instruction. These, for him that reads rightly, we can give the assurance, are at once pleasingly diversified and earnestly suggestive.

We have scarcely entered upon the volume when the name of John Woodward, the founder of English geology, arrests the attention ; and we, of course, immediately connect with it the still more distinguished name of our countryman, John Arbuthnot, the learned and able opponent of the principles enunciated by the former, in his "Natural History of the Earth ;" a work, nevertheless, in which many important truths struggled into light from among the prevailing errors of the time. Dr Woodward, we are reminded by Dr Munk, acquired more distinction as a natural philosopher than as a physician ; his practice, according to his contemporary, Dr Daniel Turner, having consisted principally in a course of emetics and cathartics, administered alternately and perseveringly for sometimes, even in the softer sex, six weeks or two months in succession. We should have renewed somewhat more strenuously the expression of Dr Turner's surprise at the severity of this discipline, were it not that we are old enough to recollect how lavishly purgatives were employed, and how little vomits were spared, by most practitioners during the first quarter of our own century. In the time of Woodward, medical men, it appears, were not more free than their successors from those little infirmities of temper, which, when duly fomented, break out occasionally even now into smart febrile paroxysms. There was then a questionable advantage, however, in the sufferers having the instruments of cure always ready, to be employed mutually in the way of a rude phlebotomy, in the shape of the rapiers which it was then the fashion to carry. Mead and Woodward, it is told, having quarrelled as to the benefit to be derived from purging in the secondary fever of small-pox, met accidentally under the gate of Gresham College, and, doubtless

under the hope of bringing the matter to a reasonable issue, drew their swords. Woodward's foot slipped, and he fell. "Take your life," exclaimed Mead. "Anything but your physic," was the retort of Woodward. It must be owned that it shakes the credit of this story, that a similar repartee, as our readers will recollect, is said to have passed, though necessarily under different circumstances, from Kneller to Radcliffe.

Of Arbuthnot, the friend of Pope and of Swift, distinguished as a humorist, a scholar, and a physician, it is told that, having quitted Scotland, and settled at Doncaster, he found that place so remarkable for its salubrity, that he was constrained, as he himself said, to leave it, as a vicinity wholly unfitted for a young physician, who could neither live nor die in it. The casually acquired patronage of Prince George of Denmark, however, introduced him to better prospects, at least in as far as regarded the alternative of living; while he enjoyed afterwards, from more discerning intellects than those of the somewhat obtuse Prince, the reputation which might not contribute so much to his pecuniary success, but which rendered it more honourable. Still, his prosperity was never remarkable. We are not informed by Dr Munk, but it is unhappily true, that towards the close of his life, when his infirmities demanded leisure and recreation, he speaks of himself as not in circumstances to live idle. Swift said of him "that he knew his art, but not his trade;" and we learn from experience, as well as through Regnard, that "*pour vivre, il faut avoir plus d'une connoissance.*" Arbuthnot died in 1735. His principal medical works were, his well-known Treatise on the Nature and Choice of Aliments, published in 1732, and that on the Effects of Air on Human Bodies, in the year following.

Passing over the somewhat equivocal celebrity of Dr Gideon Harvey, we merely mention Sir David Hamilton, in order to copy the record that, as the leading practitioner in midwifery in the metropolis at the commencement of the last century, he accumulated £80,000 by his profession, unhappily to lose it all in a single year by the South Sea Scheme. Dr Drake, the author, among other works, of a *System of Anatomy*, published in 1707, which long had a high reputation, is mentioned in a College minute, after a notice of his death from fever, as "a gentleman of very pregnant parts, and good learning, as appears by the writings he has left behind him, and deserved a much better treatment from the great world than he met with in it." There is something generous in this tribute, on the part of his colleagues, to one of the stricken deer of his time, and as such it is pleasing to extract it. It is with a very different feeling, on the other hand, that we encounter the record, that Dr Thomas Browne, the grandson of the celebrated author of the "*Religio Medici*," was killed in 1710 by a fall from his horse, while riding in a state of intoxication from Gravesend to Southfleet.

Passing from these gloomy memorials to the career of Mead, if

we do not find it free of its bitternesses, as we have already had an example with reference to Woodward, it was yet, on the whole, greatly and deservedly honoured, prosperous, and happy. Of the learned and judicious Freind we need scarcely say more than testify our admiration of his important, and too limited, labours on the history of Medicine, by far the most creditable contribution to its subject which has yet been presented by an English writer. Sir Edward Hulse, the physician in ordinary to Queen Anne and to King George I., in his old age became imbecile; and was impressed with the not rare delusion that he should die in want, to counteract which his family were in the habit of putting daily some guineas into his pocket, which they made him believe he had taken as fees. We have merely space to direct attention to the names of Stukely, the distinguished antiquarian, who left, however, the medical profession for the church; and of our countryman, James Douglas, eminent for his deserts in anatomy and surgery. The short account of Dr Meyer Schomberg merits, but only through its bearings on the ethics of medicine, a notice which need not have been extended to it otherwise. Schomberg, it appears, was a German Jew, and, at the time when he was admitted to the licentiate-ship of the London College, was in very reduced circumstances. Cultivating, however, an intimacy with his co-religionists in Duke's Place, he by their means got introduced to a considerable practice. A fluent talker, and of insinuating address, he understood mankind well, and soon found out a method of enlarging his popularity, which, says Dr Munk, had never been practised by any of his profession before; though of this we are as little certain as that the lesson has been altogether lost since. He took a large house, and kept a public table, to which, on a certain day in the week, all the young surgeons were invited and treated with an indiscriminate civility, that had very much the appearance of friendship, but was designed in reality to mean nothing more than that they should recommend him to practice. The scheme, we are told, succeeded so well, that, in the year 1740, Schomberg had distanced all the city physicians, and was in the receipt of a professional income, great for the times, of 4000 guineas a year.

The clever and well-known epigram, by Sir William Browne, shows that this physician, with all his pedantry and garrulousness, was not destitute of ability. Its occasion was a gift by the king, about 1714, of a valuable collection of books to the University of Cambridge, then as now distinguished for its Whig leanings; while nearly at the same time a regiment of cavalry was despatched to the Tory Oxford. Browne, with wit, at least, if not with truth, thus happily uses the coincidence:—

“The king to Oxford sent a troop of horse,
For Tories own no argument but force;
With equal skill, to Cambridge books he sent,
For Whigs admit no force but argument.”

How this gentleman, in his general conduct otherwise not far removed from a merry-andrew, contrived to be twice elected President of the College, and that at a time of great difficulty and excitement, owing to its celebrated dispute with its licentiates, it is not easy to imagine. It certainly could be under the rule of no analogous motives to those which led it afterwards to confer the like honour on Dr Thomas Lawrence; whose elegant scholarship, purity of character, and high and sound professional attainments, though they could not avail to lead him to eminence of position in the practice of his profession, obtained for him the honour from his fellows of being elected their president during seven consecutive years. Dr Lawrence was the intimate and highly esteemed friend of Dr Samuel Johnson; and it was doubtless, in great part, from a consideration of the excellence of his qualities, that the wise moralist was induced to speak uniformly in terms so laudatory of the merits of the members of our profession. It is gratifying, at all events, to see a Lawrence not the less honoured by the fellows of his college that he remained unappreciated by the general public; prone as the world is to value success only, and to seek and to find the means of applauding it, and of accumulating fortunes upon it, were it but in its own justification. Yet who does not feel that there are many generous spirits, whose pride it is, amid the prevailing indifference, to do homage to merit, not the more stintingly that the world has left it unrecognised: and who even yearn towards excellencies which they are conscious must exist, though hidden, because debarred, by what is twice a misfortune, from the opportunity of evincing themselves; or regarding which they are not without compunction that they have been remiss in their own labours to detect and to foster them? Such a spirit we can conceive to have been that of a Fothergill, and that, too, of the elder Heberden, whose names now present themselves to our notice in glancing over Dr Munk's pages. Both of these able physicians and benevolent men are too widely and familiarly known to require us to pause to commemorate them. Of the latter, we could wish that the display of conciseness, of sound sense, and of practical shrewdness and discrimination, which we have always admired in his "*Commentarii de Morborum Historia et Curatione*," could still find its more numerous imitators. Though our modern transcendentalists may discover, or allege, much in this celebrated treatise that now appears trivial, we could still willingly sacrifice not a few of our recent effusions of chemico-pathological doctrines, shifting as these are, to be put in possession of another similarly condensed exposition of the wisdom and experience, far more enduring in their qualities, of one of our chief physicians. Fatigued, at too short intervals, by the rise and fall of one ambitious dogma after another, by attempts at startling innovation in practice, oftentimes alike unstable, or by the raking up of forgotten expedients, to engage the attention of the many for the nonce, we naturally desire to repose once more

for a while, where all, as with Heberden, is wisdom, caution, and modesty.

We turn aside from Dr Munk's notice of Dr William Pitcairn, a member of the family of the still more celebrated Dr Archibald Pitcairn, for the sake of introducing a sketch which occurs to us from the autobiography of the Rev. Dr Carlyle, whose lively portraiture of many of his distinguished contemporaries has been recently received with so much interest. The picture has its value, not only with reference to the man, but with regard to the customs, professional and otherwise, of the physicians of rather more than a century back. Dr Carlyle, drawing together his reminiscences of a journey to London in 1758, thus writes:¹—"Dr Pitcairn was a bachelor, and lived handsomely, but chiefly entertained young Scotch physicians who had no establishment. Of these Drs Armstrong and Dickson were much with him. As our connections drew Robertson² and me frequently to the city, before my sister's house was ready, by earnest invitation we both took up our lodging at his house. We never saw our landlord in the morning, for he went to the hospital before eight o'clock; but his housekeeper had orders to ask us at breakfast if we intended to dine there, and to tell us when her master was expected. The Doctor always returned from his round of visits before three, which was his hour of dinner, and quite happy if he found us there. Exactly at five his chariot came to the door to carry him out on his afternoon visits. We sat as long as we liked at table, and drank excellent claret. He returned soon after eight o'clock; if he found his company still together, which was sometimes the case, he was highly pleased. He immediately entered into our humour, ate a bit of cold meat, drank a little wine, and went to bed before ten o'clock. This was a very uncommon strain of hospitality, which, I am glad to record, on repeated trials, never was exhausted. He lived on in the same manner till 1782, when he was past eighty (?); and when I was in London for the last time he was then perfectly entire, and made his morning tour on foot." "He survived a year or two longer."

We might have been willingly detained by the name of Akenside, best known as a poet, but by no means undeserving as a physician, even if constrained to pass by more hastily that of Addington, who had the high fortune, whatever his other merits, of having a Chatham for his patron, and a prime minister for his son. But we can dwell upon neither; nor upon the recollections of the benevolent Brocklesby, to whom we should have been, nevertheless, not unwilling to have found Dr Munk apportioning a somewhat larger space. A single trait of Dr William Hunter, also, added from the same graphic pen from which we have borrowed our illustration of Pitcairn, must suffice us: "Hunter," says Carlyle (p. 345), "was gay and lively to the last degree, and often came into us (a club, meeting at the British Coffeehouse) at nine o'clock, fatigued and

¹ *Autobiography*, p. 334.

² *The Historian*.

jaded. He had had no dinner, but supped on a couple of eggs, and drank his glass of claret." By the way, we are indebted to the same chronicler for the information, that it was through the cold reception of Dr John Gregory in London, that the Scottish metropolis enjoyed the benefit of the services of that eminent physician. "Having found Aberdeen too narrow a circle for him," is the reverend Doctor's record (p. 179), "he tried London for a twelve-month without success,—for being ungainly in his person and manner, and no lucky accident having befallen him, he could not make his way suddenly in a situation where external graces and address go much further than profound learning or professional skill." This reminds us, too, of the fortune of Jenner, who, when Clive, the eminent surgeon, with other friends, invited him to settle in London, promising him a practice of ten thousand a-year, took the step, failed, and resigned with something like an expression of disgust. Our readers will recollect the letter regarding this in our pages,¹ communicated on the part of Dr William Brown of Melrose, in which the greatest of medical benefactors thus addresses Dr Trotter, the eminent Navy physician: "I have done with the metropolis—it savoured too strongly of ingratitude. It was impossible to remain there without sinking annually a thousand pounds, so I have again commenced village doctor; but don't repine, for I like the country, but abominate the town." Happily our modern Babylon does not absorb all the virtues; and not less happily, there are men who can discover, and who can accommodate themselves to the usually difficult lesson, that science and benevolence may have even its narrow means converted into more than a competency, through those higher rewards which are not the less real that they cannot be coined in gold. Yet, when we see with what petulance some prosperous men bear their fortunes, we are not to wonder that testiness should be sometimes the companion of neglect, or allege defects of temper, should these occur, as a cause, which may have appeared only as an effect. The name of Jenner, unfortunately for the London Royal College, has never appeared in its roll. He received his degree at St Andrews in 1792. In 1806 he was elected an Honorary Fellow of the Royal College of Physicians of Edinburgh, a spontaneously accorded tribute of respect, which he recognised, in his letter of acknowledgment, in warm and complimentary terms.

The names of Baker and Cadogan, though both of them highly meritorious, need not detain us in our rapid survey. Of Dr Richard Warren, amiably sketched to us in the way in which Halford knew how to portray a fashionable physician, we learn that he made £9000 a year, and was able to leave a plum and a half to his family. Of what he bequeathed, besides, to the science of his profession, we know nothing, unless that he contributed a paper on Bronchial Polypus, and another on Colica Pictonum, to the first and second volumes of the Transactions of his college; opuscula, which

¹ *Edinburgh Medical Journal*, May 1859, p. 1075.

are indicated, but not specified, by Dr Munk. The former of these we may prize, as presenting the details of an interesting case, narrated without pretence: in the latter, in addition to some judicious practical directions, we have chiefly remarked that the writer makes no allusion to the prior, more complete, and really valuable, researches of Sir George Baker. We are told of Dr Turton, also, that, on his death in 1806, he left to his widow £9000 a-year in lands, and £60,000 in the funds, accumulated in practice; but for him, too, we must measure the professional scientific inheritance by a different standard. Our countryman, Sir John Pringle, receives from Dr Munk the conspicuous notice he merits.

Wintringham, Lettsom, Pepys, Sims, Jebb, and Blanc, are all celebrities, to whom it would have gratified us to have offered our passing tribute. The singularly instructive career of Denman, with fortune crowning it at the last, and that of Wells, to whom the due measure of justice was never rendered, each on its own merits, alike deserves attention. Dr Hillier Parry, from his character and his genius, appears to have been fully deserving of the life of unbroken success which it was his fortune to enjoy. Nor would we have it believed for an instant, that there are grounds for considering that this is really what has not frequently occurred. On the contrary, it is gratifying to observe from these annals, how often deserts and worldly distinction have proceeded together; although with occasional, and not rare, exceptions, to which we direct no closer notice, where meaner arts, and less arduously won successes, have led to a lavishly bestowed, though a scantily merited, fortune. To these we give the less heed, that success so attained is only splendid in the eyes of the sordid, and usually is soon unremembered. Nor would we grudge narrowly even to demerit its undue gains, could we be sure that real worth did not suffer, through the indirect barrier interposed in its way, in the proportion that its opposite was rewarded. We must accept the lesson, meanwhile, that there are many scenes of worldly prosperity, into which he who would find ingress would do better to remember the "*médiocre et rampant et l'on arrive à tout*" of Beaumarchais, than the "*erectos ad sidera tollere vultus*" of Ovid.

And so the various celebrities shift before us, many of them passing like shadows, that have preserved their outline while they have lost their substantiality. As we approach our own day, the forms are more distinct to us, for the living features are not yet forgotten. John Latham, Baillie, Halford, and Babington are among the more distinguished names who bring up the close of the last century, and who, each with his peculiar and often widely-divergent lustre, throw a brilliancy over the roll of the English college on which it has a just title to pride itself. And yet, among them all, we can single out no individual reputation equal, in the best and highest sense, to that of our own Cullen. We speak not of Cullen's theories; though we are not inclined to join in the

sneers of those, who, fascinated by their own imaginings, do not see that the strength of the great nosographer was his own, by which he constituted his own epoch, and that his weaknesses were to be referred to the days that preceded him. The hypothetical doctrines, introduced and expounded by Cullen, have had their proper and legitimate uses of serving as stepping-stones to our existing knowledge, just as the hypotheses that are prevalent and vaunted now will serve in their turn for what is to follow. But what we admire in Cullen, and what we do not see rivalled by any of the English school in his era, is his power of instituting a clear and comprehensive survey of the complete range of the medical science of his time, eliminating what was effete, determining what was vague, and illustrating what was certain; and reducing the whole to a system, with a force, a conciseness, and a precision, of idea and language and method, for which he had no adequate model from the past before him, and in which we would gladly see him have a follower, who could now accomplish the like, and with the like symmetry and compactness, for the existing state of medical knowledge. The illustrious teacher, who had rendered British medicine celebrated, and whose works were everywhere translated at a time when translation was a rare honour, was not more successful than the illustrious discoverer, who had blest mankind by the introduction of vaccination, in obtaining the Honorary Fellowship of the London College; but neither of them had studied nature through the medium of an English university.

Baillie, one of the last whom we have mentioned, occupied for sixteen hours daily in the toils of his profession, paid for his brilliant successes by wearing out, at a little beyond threescore, that spirit, the temper of which did not permit it to rust out. There is some satisfaction in observing, however, that the life of a successful and leading physician has not been usually a short one, though a contrary statement has been currently accepted. In the century before us, a Fothergill dying at 68, a Brocklesby and a Pringle at 75, an Addington, a Munro, and a Babington at 76, a Halford at 78, a Sims at 79, a Pitcairn at 80, a Layard, a Latham, and a Farquhar at 81, a Denman at 82, a Winttingham at 83, a Blane and an Underwood at 84, a Cadogan at 86, a Baker and a Pepys at 88, a Heberden at 91, and a Crichton at 92, are no mean representatives of a race whose common limit is threescore and ten, or, by reason of extraordinary strength, fourscore years. If the ordinarily received statistics, with reference to the degree of longevity of the members of the medical profession, have shown something less favourable than this, we suspect that it is because it must be gathered from them, that it is not the able man in prosperity, but the able man in adversity, whose life is a short one; and that it is the pain of failure, and the bitterness of disappointment, added to the career of toil, often the hardest among the least rewarded, that chills the sources of vitality, and gives the earlier, that it gives the obscurer, obsequies.

We now, once more, take leave of Dr Munk, thanking him for his interesting labours, and recommending these heartily to the attention of our readers. His materials, in all their briefness, we repeat, are often strikingly suggestive. It will only be he who reads their lesson without reflection, that can read it without profit. Amusement, though not of a frivolous character, we can promise for the most casual perusal.

On Food and its Digestion ; being an Introduction to Dietetics. By WILLIAM BRINTON, M.D., F.R.C.P., Physician and Lecturer on Physiology to St Thomas's Hospital. London: Longman, Green, Longman, and Roberts: 1861.

DR BRINTON'S treatise is a reprint of the article on the Stomach and Intestines, which he published in the *Cyclopædia of Anatomy and Physiology* about six years ago. It contains a very clear systematic account of the physiology of food and digestion, on a level with the present state of the science, and will be found profitable and pleasant reading by those who wish to acquaint themselves with modern views of the subject. The first portion of the volume is occupied with the anatomical and physiological description of the organs and process of digestion, illustrated by woodcuts (mostly from Kölliker); and the second part is devoted to the study of the different kinds of food. In an appendix are contained examples of the dietaries of the army and navy, poorhouses, prisons, etc. The information on these subjects is accurate, and appropriately arranged, and the writer avails himself judiciously of the views and researches of Lehmann, Bidder, and Schmidt, and other foreign authors.

There is, of course, not much novelty to be expected on such a theme; but Dr Brinton has devoted much attention to this department of physiology, and has examined for himself many of the more important points, on which he can therefore speak with some authority. On several of the debated questions, such as the nutritive value of gelatin, the action of alcoholics, etc., we are glad to find that Dr Brinton expresses his views rather on the popular side than on that of strict science. Indeed, on the subject of digestion, specially so called, science has been always apt to be too dogmatic, and her claims to infallibility too strongly and prematurely asserted. Not to mention the errors in regard to the nutritive value of gelatin, the more recent example of the variations in doctrine in regard to alcohol are exceedingly curious in this respect. It was first alleged that alcohol was only respiratory or *heat-producing* food, in Liebig's view, and thereby saved the consumption of tissue. But unfortunately for this dogma, it was found that the quantity of carbonic acid expired was diminished instead of being increased by the use of alcohol, which could not therefore act by combustion as a

generator of heat. It was next maintained, as the result of experiments by Boecker, Lehmann, and others, that alcohol, like tea and coffee, took effect by stopping the waste of the tissues, and diminishing the excretion of uræa and carbonic acid, so that a smaller supply of food would be sufficient during its use. The later experiments of Edward Smith, however, were in opposition to those of the observers last mentioned; and finally, the recent researches of Lallemand, Perrin, and Duroy, seem to prove that the *whole* of the alcohol taken into the system is eliminated from the body *unchanged*. In the midst of such conflicting statements, we must pause for further light,—the action of alcohol remaining for the present inexplicable. One cannot help reflecting, however, that our notions of the action of food and drink upon the body are far too exclusively chemical, in consequence, no doubt, of the circumstance, that since the time of Prout, the physiology of digestion has been studied almost exclusively from a chemical point of view. May not food, and drink too, possess many dynamical properties—electrical, or what not—as important as their mere material quantities of carbon, hydrogen, oxygen, and nitrogen; and do not the forces contained in a living body require to be sustained and stimulated, no less than the material substance of the tissues to be changed and renewed?

A Manual of the Practice of Medicine. By GEORGE HILARO BARLOW, M.A. and M.D., Fellow of the Royal College of Physicians, Senior Physician to Guy's Hospital. Second edition. London: Churchill: 1861.

DR BARLOW has shown a laudable anxiety to improve upon the first edition of this work; but we cannot truly say that he has fulfilled our idea, or even our reasonable expectation, of what a text-book should be, as a guide to modern practice in internal diseases. The present edition may be recommended, however, as being, on the whole, quite as good as any other book of like dimensions or price known to us in the English tongue, though still very far behind the works both of Watson and Wood, whether in fulness of matter or in adaptation to the wants of the student. What we miss in almost all works designed as *elementary* in the department of practice of medicine, is a thorough and personal appreciation of the value of evidence as applied to the important questions which emerge at the bedside. We have all manner of vague statements of generally received doctrines and well known facts, but we are never, or almost never, permitted to see clearly how or why these doctrines have come to be generally received, or how far they are really worthy of belief; and in regard to the facts which we are called upon to accept as the basis of our practice, there is too often an unpleasant

shakiness about them which does not augur well for the future of the art. Dr Barlow's book is not more open than many others to these objections; but we confess we should like to see, in the work of a leading hospital physician of Dr Barlow's standing, a little more independence of tone, and a good deal more fulness of information on points which it belongs especially to a man of large experience to place in a new light, or in one more intelligible than before to the young, or less experienced practitioner. To give only one instance out of many, it is very difficult to discover from this book whether Dr Barlow has made up his mind at all, or what his mind really is, on the important practical question—Whether diphtheria and croup are the same, or different, diseases? Now, as it is impossible for us to suppose that Dr Barlow has not seen both diseases on a pretty considerable scale, we should have liked to have had in this book a lucid statement of his exact opinion, and of the grounds for it, *quantum valeant*. Instead of which we have only what might have been written by any tolerably clever fourth-year's student, without almost any experience of either disease; and we get no nearer to the author's real ultimate judgment than this, that "to croup, in some points, it (diphtheria) bears a strong resemblance, though in other respects it is as strongly distinguished from it." The distinctions given are hardly so clearly stated as to bear out any decided opinion, and the general impression left is that Dr Barlow really believes the two diseases to be distinct, but that he himself can hardly tell why he so believes. In like manner, the general indifference manifested by diphtheria to the usual local determining causes of epidemic diseases, is stated only to introduce a counter-statement, which nearly neutralizes the original one; and this is backed by an observation which we venture to think is worth next to nothing, inasmuch as it is only a loosely recorded narrative, to the effect that a lady was seized with diphtheria at a hotel, where she "complained of bad smells, as from drains;" and that another case afterwards occurred at the same hotel. It is most injurious to students to have their minds filled with this kind of *slip-slop*: and it would be far better to tell them at once that there is nothing known about the matter.

We by no means wish, however, to deny to Dr Barlow the merit of having written a book generally trustworthy, and calculated to be of some use to students. We wish only that he had been able to lay hold of his subject with a somewhat firmer grasp, and to treat it with more clearness and decision: more real matter, in short, in fewer words. So far as we have observed, the work differs favourably from many of the so-called "Manuals," in the comparative rarity of those positive inaccuracies of statement which are, unhappily, common in such works; and in respect of the manifest pains taken to avoid sweeping and unsound generalizations in the description of common diseases, we think the author deserves the praise of having written well and wisely. The treatment recom-

mended is, we think, too complex, and altogether too much of the old school of routine and prescription; but it is fairly stated, not extreme, and certainly an improvement upon that of some older manuals still in the hands of our students.

1. *On the Therapeutic Influence of the Southern Climatic Sanatoria, particularly with reference to Chronic Tuberculosis of the Lungs.* By Dr RULLMANN of Wiesbaden. Pp. 31. London: Churchill: 1861.
2. *Meteorological and Medical Observations on the Climate of Egypt, with Practical Hints for Invalid Travellers.* By DONALD DALRYMPLE, M.D. Lond., F.R.C.S. Pp. 80. London: Churchill: 1861.
3. *Mentone and the Riviera as a Winter Climate.* By J. HENRY BENNET, M.D. Pp. 112. London: Churchill: 1861.
4. *On the Climate of Pau, etc.* By ALFRED TAYLOR, M.D., F.R.S.E. Pp. 283. (Third Edition.) London: Churchill: 1861.
5. *The Mineral Springs of Aix-la-Chapelle and of Borcette.* By ALEX. REUMONT, M.D. Pp. 95. London: Williams and Norgate: 1861.
6. *A Handbook for Southport, Medical and General.* By DAVID H. M'NICOLL, M.D. (Second Edition.) Pp. 219. London: Churchill: 1861.

1. THIS brochure of thirty-one pages contains a considerable amount of practical information upon the subject of climatology. It is amplified from a paper originally presented to the Congress of Physicians of the Middle Rhine, at Frankfort, on the 13th of October 1860. It was printed in the *Würzburger Medicinische Zeitschrift*, 1861, band 2, whence it has been translated and reproduced in its present form by Dr Daniel Moore of Dublin. The author sets out with a rapid historical sketch of the usage of change of climate as a prophylactic and therapeutic agent, and supplements this with an urgent appeal to those to whom the opportunity is afforded, to enrich, as much as possible, our hitherto scanty information concerning the relative value of southern climatic sanatoria. "There prevails among medical men in general," he says, "a great uncertainty in the appreciation and use of the southern sanatoria. Practitioners are often in doubt as to what disease is best adapted to a southern climate. On the one hand, too much is hoped for; on the other, too little is expected from this change of climate. Indeed, the beneficial influence of a southern climate on

the disease against which this has hitherto been most employed, namely, chronic pulmonary tuberculosis, has been altogether questioned. But, notwithstanding this uncertainty and diversity of opinion, resort to southern climatic sanatoria yearly increases; and a more accurate study thereof, and the establishment of definite indications, constantly become more important and more urgent." The subsequent pages are devoted to a somewhat desultory, but exceedingly interesting, analytical discussion of the subject of climatology, in which the relative value of the different *climatic sanatoria* is freely canvassed. Both author and translator deserve our thanks for the pains they have taken to bring under our notice a pamphlet so full of useful knowledge.

2. Dr Dalrymple has turned his own indisposition to good account, for, whilst receiving benefit from change of climate himself, he has not been forgetful of the interests of others who may follow in his footsteps, and on a similar errand. "I went to Egypt," the author says, "in obedience to the orders of my physicians, to obviate the effects of many years' over-work. A climate in which an active skin, free pulmonary exhalations, plenty of sun, amusement, occupation, and freedom from head work could be combined, was the postulate, and this, I was told, I should find in Egypt." Another remark he adds to this—and it would be well if every medical practitioner would improve his opportunities of travelling in a similar manner—"In addition to getting well myself, I was anxious to promote recovery in others; I was desirous to observe whether the conditions under which I was placed were those required for restoration, and I set myself to provide the means of observation." That is to say, he procured from Messrs Negretti and Zambra the necessary meteorological instruments, which were afterwards made good use of on board the Nile boat. In this little book the reader will meet with a great deal of information respecting matters which are frequently, but very erroneously, regarded as of too trivial a nature to be cared about. Hear what the author himself says of the cost of his voyage up the Nile. "I am quite sure that after my experience of one voyage, I could make a deduction of from 12 to 15 per cent. on this; but one buys Eastern experience *au poids d'or*." And not only upon the point of expense, but equally upon that of comfort, Dr Dalrymple offers many useful hints which travellers, especially invalids, to Egypt would do well to become acquainted with. The meteorological tables contain much valuable information respecting the condition of the climate of Egypt during that season in which alone invalids are accustomed to reside there. The book is written in an easy, manly style, abounds in thoroughly practical information, and is free from the too common vice of lauding the climate of one locality at the expense of its equally worthy neighbours.

3. Dr Bennet first presented his observations upon the climate of Mentone, at various periods, in the pages of the *Lancet*, and these

are now collected and embodied in a post-octavo volume of 112 pages. The author, by reason of delicate health, induced by "the harassing labours and cares of a London professional life," has adopted "Mentone as a permanent winter residence," and has already spent two seasons there. Of the influence of the climate in the alleviation of pulmonary consumption, the writer says:—"Those who were in the early or even secondary stages of the disease, and had vitality and constitutional stamina left, mostly did well. I saw in several young females well-marked, crude, tubercular deposits disappear, gradually absorbed. In several cases of accidental phthisis in middle-aged, over-worked men, the amelioration was still more apparent. Well-marked cavities became partly or entirely cicatrized, and the constitutional symptoms gradually subsided, the general health and strength steadily improving. Those who were in the later stages of the disease, on the contrary, generally speaking, appeared to derive but little benefit from the change. The malady seemed to progress slowly, but steadily. They suffered from the cold and the wind, and especially from the occasional outbreaks of wet, chilly weather. Moreover, some felt bitterly the absence of home comforts, and their separation from friends." Dr Bennet does not endeavour to hide the deficiencies in the climate of Mentone, but he amply compensates for these admissions by the enthusiastic manner in which he plies his reader with the advantages possessed by it. He appears to lay peculiar stress, and very properly so, upon the topographical relations of the neighbourhood, for in these are to be found a large proportion of the secret agencies in the cure of disease, which, only in combination, amount to what we understand by the term medical climatology. Out-door exercise in attractive scenery, together with a certain amount of home comfort, are as essential to that class of invalids who usually resort to *southern climatic sanatoria*, as the most balmy atmosphere and the steadiest temperature. In the early stages of pulmonary consumption, in some kinds of bronchitis in which there is a freely secreting membrane, in scrofulous diseases of childhood, in cases of "middle-aged, over-worked" persons suffering simply from wear and tear, Dr Bennet recommends Mentone strongly; and the reasons which he adduces for doing so appear to sustain his opinion. We can cordially recommend Dr Bennet's book to the profession as containing much useful information.

4. Dr Taylor's work on the climate of Pau has been before the profession for very nearly twenty years, and has been well received, not only in our own country, but by the Faculties of other nations, into the languages of several of which it has been translated. It has now reached its third edition. The former copies of the work contained little beyond a general description of the climate of Pau itself, but in the present edition several other places have been added, to make room for which the author has made use of his scissors with good judgment. The book is so well known to the

profession, that we need only add that the third edition, in our opinion, bears favourable comparison with its predecessors.

5. Dr Reumont, of Aix-la-Chapelle, has added to his own experience of the medicinal effects of the mineral waters of that city and of Borcette, that of his father, and of many other practitioners of a more remote period. He has collected from these resources the histories of upwards of fifty cases in which these waters have exercised a beneficial effect. We cannot attach much importance to these histories, however, accurate as they may be, for they are signally destitute of *bona fide* medical details. On the contrary, we regard them as objectionable, considering the semi-popular style in which the book is written. But in addition to the clinical observations the volume contains much instructive matter.

6. A large proportion of Dr M'Nicoll's work is occupied with the natural history of Southport and its environs. His motive for dwelling so largely upon this subject, the author tells us, "has been a desire to encourage useful and agreeable mental occupation on the part of those visitors whose stay is more or less prolonged, and whose minds would, in the absence of some external object of thought, turn and prey upon themselves. This continual contemplation of their own condition—the result of the depression attendant upon disease, and absence from the ordinary engagements of life—needs to be carefully guarded against, and I have not thought it out of place in a medical work to suggest a substitute." The "medical" part of the work is small compared with the general description of the topography and natural history of the locality, but the remarks are practical, and of great utility so far as they go. Visitors to Southport will find Dr M'Nicoll's work invaluable in the point of view expressly dwelt upon by the author in the above quotation.

Part Third.

PERISCOPE.

MIDWIFERY.

CASE OF TWIN BIRTH WITH PLACENTA PRÆVIA. BY DR SCHUCHARTDT OF NIENBURG, HANOVER.

THE rarity of such cases as the following, which occurred in the course of the past year, has induced me to record it:—

Mrs H——, thirty-seven years of age, was married in the beginning of 1860, and had had no child previously to my seeing her. She was small, somewhat thin and short; the spine was a little curved, owing to a fall, in the upper lumbar vertebræ, in early youth, but the capacity of her pelvis, as I discovered on subsequent examination, had not been affected. She stated that she had

last menstruated about the middle of May, and that she had felt the first movements of the child towards Michaelmas. On the 25th November 1860, I heard of the woman for the first time by her husband coming to me and informing me that his wife, who had become pregnant in spring, had, without assignable cause, been seized a fortnight before with violent bleeding from the genital organs, that after taking some acid drops which had been prescribed by another practitioner, the hæmorrhage had ceased, but that it had returned with renewed violence on the morning of the 25th of November. I immediately went to my patient, and found her in the following condition:—The bleeding had almost entirely ceased; the woman, who was lying in bed, was moderately pale, and her pulse of 100 was weak and small. The fundus of the uterus reached above the navel, and the belly was much distended, especially in breadth. The movements of the child could be felt vigorously to the left, but very feebly to the right of the navel. The foetal heart could be heard somewhat indistinctly between the umbilicus and the symphysis; in spite of the most careful examination, the beating of only one foetal heart could be heard. On vaginal examination, the os uteri was found to be almost entirely closed, so that the finger could not be introduced; the portio vaginalis, on the other hand, was softer and looser than it usually is in primiparæ at this period. The patient was ordered to keep the recumbent posture, to make use of an unstimulating diet, and to continue the use of the acid drops.

In the night between the 30th November and 1st December, considerable hæmorrhage again occurred. When I saw the woman on the 2d December, I found her anæmic, the portio vaginalis was more shortened, and the os uteri a little open, so that I could introduce my finger, and so assure myself of the existence of a placenta prævia. Although, judging from the time of cessation of the menses, and the first occurrence of the movements of the child, the pregnancy had scarcely existed more than twenty-eight weeks, and I would willingly have delayed artificial interference, with a view to the preservation of the child, I had still a firm conviction that when the next considerable hæmorrhage took place I should be obliged to terminate the labour, and I gave directions to the patient's relatives to send for me without a moment's delay.

At ten o'clock on the evening of the 3d December, violent bleeding returned. I reached my patient about midnight. She was very pale and sunken, her pulse was very small and frequent, and for some time past regular but weak pains, recurring at increasing intervals, had been present. The portio vaginalis had disappeared, the os uteri was of the size of a sixpence, and I could feel the substance of the placenta. The movements of the child were pretty distinct to the left, very weak and indistinct to the right of the umbilicus. Only one foetal heart could be heard. As the hæmorrhage still continued, and the loss of blood had been very considerable, as pains were present, and the os uteri had begun to dilate, I proceeded to deliver her artificially at a quarter past twelve. I introduced the right hand, dilated the os uteri, separated the placenta on the left side from the wall of the uterus, ruptured the membranes over the placenta on the left side of the uterus, seized the right foot, drew it down and extracted the child. The original presentation had been the first cranial. The child was alive, though small, and weighed only $3\frac{1}{2}$ pounds. When the overlying placenta, which was almost entirely central, along with its membranes had been separated and removed, and the hæmorrhage in consequence had been much diminished, I could feel distinctly a second bag, and consequently had certain evidence of the presence of a second child; the breech presented in the second position. As the bleeding still continued, the membranes were ruptured, and the second child extracted, which, on account of its smaller size, was accomplished more easily than had been the case with the former, and the placenta, which lay on the right side of the fundus, was removed with the membranes. The second child, a female, was very small, had a withered appearance, weighed only 2 pounds, and breathed in a laborious and gasping manner. The membrana pupillaris had disappeared. The placenta (prævia) of the first child was of the normal size and weight, and of a circular shape; the cord was inserted into

its middle. The placenta of the second child, which was quite separate from the first, lying in the fundus of the uterus, near the entrance of the right Fallopian tube, and the membranes of which formed a sac entirely distinct from the first ovum, was about two-thirds the size of the first, had also a circular form, and the cord was inserted almost in its centre. After the womb was emptied the hæmorrhage soon ceased, and the uterus contracted normally. The patient, when again placed in bed, nearly fainted, but on the administration of a little wine and tincture of cinnamon, revived to a certain degree. The whole operation had not lasted quite a quarter of an hour. The first of the children, a boy, was viable, but in spite of every care he died on the fourth day. The second child, a girl, could not be called viable, her respiration continued very imperfect, and she died between 16 and 18 hours after her birth.

The patient made a pretty good recovery. Towards the evening of the day of her confinement she fainted. When I saw her half an hour afterwards she had come to herself, and was sweating profusely. The uterus was firmly contracted, the lochial discharge was inconsiderable, the pulse was 110, the tongue was somewhat dry in the centre, the breasts were flaccid, and contained little milk. On the following day she was feverish, her skin was hot, her tongue was dry, and her belly was distended and painful on pressure. The next day the feverish symptoms abated, the pain left her, and her only complaint was of great weakness. Under a nutritious diet she gradually regained strength, and at present (six months after her confinement) she is well and strong. Menstruation has been again for some time interrupted.

The complication of which the above case is an example is scarcely ever alluded to in the systematic books on midwifery. Even in works of a statistical character such cases are but rarely to be found. In the limited number of works which I have at my disposal, I have met with the four following cases:—

The first case, which was observed by Professor Niemeyer of Halle, was published in the dissertation of Osius, "*De Placenta Prævia*," published in 1831. Osius himself remarks that a case of the kind was for the first time observed by Niemeyer. The woman was thirty-two years old, and had already borne three children. One placenta was situated quite centrally over the os uteri, the other was attached to the fundus of the uterus, near the entrance of the right tube. The first child, a girl, which weighed five pounds, lived; the second, also a girl, gave only slight signs of life, and died within ten minutes. A fortnight after the confinement the mother had perfectly recovered, and from that time the physician heard no more of her.

The second case was observed by Ricker, in Nassau, in the year 1836. The first child lived; the second was imperfectly developed, and died. The mother made a good recovery. The navel-string of the second child passed twice round the neck of the first-born, and was drawn so tightly that it could not be loosened; as it was thought to belong to the first child, it was cut through, after being tied with a double ligature. Nothing is stated regarding the position of the placenta and the membranes.

The third case was published by Professor Trefurt, in 1837. The woman was forty-one years of age, had already borne ten children, the last two of which were twins, and had aborted several times. The placenta prævia entirely covered the orifice of the os uteri. Both children (girls) were apparently still-born, but were soon brought to life. Six years afterwards the mother and both daughters were in perfect health. Nothing farther is communicated regarding the placenta and the membranes.

The fourth case was recorded by H. Spöndli, in 1854. The woman was twenty-eight years old, and had already had a child. The first child, a boy, appeared to be at the full time, although below the usual size, and dead. Before the removal of the first placenta, the second child, also a boy, was delivered; it was below the ordinary size, and was dead. The first placenta, which reached from the os to about the middle of the anterior wall of the uterus, was therefore removed; the second placenta, which was situated higher up, and began where the other stopped, was allowed to remain for a short

time. After a quarter of an hour the strength of the woman began to give way; a very prolonged fainting-fit occurred, convulsive contractions of the diaphragm manifested themselves, and the woman died half an hour after her confinement.

I may make a very few remarks regarding the statistical question of the occurrence of placenta prævia in cases of twin-births. According to Sichel (Schnidt's Jahrbücher, 1859), out of 17,730,674 births in Prussia and the Electorate of Hesse, 213,330 are twins. According to the same authority, out of 575,001 births, placenta prævia occurs 442 times, or once in 1303 cases; assuming the proportion to be the same, placenta prævia should occur in the 213,330 twin cases 163 times; or, out of 108,302 births, one case of placenta prævia should happen with twins. According to Ricker's report of the midwifery operations performed between the years 1821 and 1842 inclusive, in the third and fourth districts of the Dukedom of Nassau, there occurred during this time 147,437, and among them only one case of placenta prævia with twins is mentioned. If this is the only case among the total number of cases, the condition in question must be of still rarer occurrence.—*Monatsschrift für Geburtskunde, Berlin, October 1861.*

ON THE OPERATION FOR VESICO-VAGINAL FISTULA. BY DR MARION SIMS.

DR MARION SIMS, the American surgeon (says the Parisian correspondent of the *Lancet*), whose skilful performance of the operation for vesico-vaginal fistula I mentioned as having excited much attention at Paris, after a practical illustration of his method at the Charité, last week, gave, at M. Velpeau's special request, a clinical lecture on the subject.

"The principal points," said this gentleman, "in which my practice differs from that usually pursued at the present day, I may arrange as follows: 1st, as regards the position of the patient; 2d, as concerns the manner in which I pare the edges of the fistula; and 3d, the number of sutures I apply, and their distance from the lips of the wound.

"In the commencement of my practice I was in the habit of placing my patients on their knees and elbows, the head being depressed and the pelvis raised. This posture I abandoned; it presented two great disadvantages—one, in rendering the administration of chloroform impossible, or nearly so; the other in fatiguing the operator by obliging him to remain standing. I now place my patient on her left side, her thighs flexed at a right angle with the pelvis, and maintain the upper part of the trunk in pronation, with the sternum towards the bed or table, on which there must be neither pillow nor cushion. By this position of the trunk the organs of respiration are not compressed, nor are the abdominal viscera pressed into the pelvis so as to displace the bladder or vagina. The speculum of which I make use has a special form; its blades curve towards each other so as nearly to meet at their distal extremity, an arrangement which prevents the possibility of injury to the vaginal coats. I divide the operation into three stages: 1st, the paring of the lips of the wound; 2d, the passing of the ligatures; and 3d, the adjustment and torsion of the metallic sutures.

"For the first stage four instruments are requisite—a pair of straight or curved scissors, a bistoury, a tenaculum, and a pair of forceps. With the tenaculum I seize the vaginal mucous membrane near one of the angles of the fistula, and with the bistoury slightly incise the *vaginal* mucous membrane. Raising this tissue with the tenaculum, I with a pair of straight scissors cut through the whole thickness of the edge of the wound *down* to the vesicle mucous membrane, which it is all-important to avoid wounding. I then proceed to attack a neighbouring portion, and so on until the whole surface is pared.

"In the second stage I use a tenaculum, catch-forceps, and needles threaded with a double silk, having a loop at one extremity. Raising a lip of the wound with the tenaculum, and holding the needle by means of the forceps, I insert it into the tissues near an angle of the fistula, at about a third of an inch from the free margin of the wound, taking care when bringing it out not to include any

of the vesicle mucous membrane. Guiding the point of the needle on the tenaculum, I withdraw the forceps, and draw the point forwards by reapplying the instrument to that extremity. In reapplying the needle, in order to complete the stitch, I commence in the same way from the lip of the fistula, and cause the needle to emerge at a distance of a third of an inch from the wound. When one suture is thus complete, I hitch both ends into a notch made in a light piece of stick until required, and proceed. The needles, which are nearly straight, and fine, should be introduced obliquely, for fear of wounding the vesicle mucous membrane; and the stitches should be five, six, or even more in number. When all are *in situ*, I take the loop of the first, pass it through a silver wire, which I twist so as to be securely fastened, and by gentle traction substitute for each silk suture one of silver wire.

"In the third stage, the operation is completed by the twisting of the silver threads or wires. For this purpose I have a small metallic conductor, furnished at its extremity with a square plate somewhat similar to the handle of the common grooved director. Into the fissure of this instrument I insert the two ends of one of the silver sutures, and give a gentle twist to draw the thread tight; which done, the ends are to be cut, so as to leave a length of about two-thirds of an inch in connexion with the wound; these I bend back at a right angle, so that the force of the torsion may not act upon the lips of the fistula but on the wires only, and then complete their fastening by a few more twists with a forceps.

"Before carrying the patient back to bed, a catheter must be introduced; this instrument is shaped like an S, and its vesical extremity is pierced with little pin-holes. The bladder should be first washed out with an injection of water, and the catheter left *in situ*, and changed at least twice a day. The diet must be generous, and the administration of morphia in doses sufficient to produce constipation is indicated; a quarter of a grain being given twice, the first dose immediately after the operation, and the second at night. The sutures may be removed on the eight or ninth day; for this purpose the twisted end is drawn forward by the forceps until the part which has been united is brought to view, and *then only* is the silver wire to be divided. These details," added Dr Sins, "may seem minute and elaborate, but I believe them all-important, more so than the skill of the surgeon or the brilliant manner in which he may achieve the operation."

LIVING SPERMATOZOA IN THE VAGINA EIGHT AND A HALF DAYS AFTER INTERCOURSE.

IN the *American Medical Times* for March 9th, Dr S. R. Percy reports a case in which, eight days and a half after the last sexual connection, he found semen issuing from the os uteri. A microscopical examination revealed "living spermatozoa, and many dead ones." During this time the husband of the patient had been from home. Of the honour and veracity of the patient, Dr Percy says: "I would stake my reputation on her honour." Dr Percy thinks this fact may have a medico-legal bearing, and will necessarily widen the margin to the ordinary term of pregnancy granted to exceptional cases.

HYGIENE.

ON THE BAD EFFECTS OF MARRIAGES AMONGST NEAR RELATIONS. BY PROFESSOR DUVAY OF LYONS.

A GENERAL interest is attached to the inquiries which have for their object the establishment upon positive facts of the bad effects arising from marriages contracted in certain conditions. Among these, one of the most important is the question of consanguinity, the dangers of which, in a sanitary point of view, have long passed unrecognised, and have only been suspected from time to time in consequence of the expression of opinion on the part of persons who, though they spoke with all sincerity, carried no scientific weight. At present it is different,

and in this kind of alliance all enlightened men may see an efficient cause of infirmities, of constitutional diseases for the individual, and of degeneration for the race.

It has been said by the small number of practitioners who maintain the innocuousness of marriages among relatives, that the influence of these alliances is good or bad according as the parties are exempt from, or subject to, constitutional diseases; that consanguinity presents no disadvantages, and should even produce good results, if those who marry are exempt from all hereditary disease, or still better, are endowed with superior physical and mental qualities; but that, on the other hand, these marriages are necessarily hurtful if they take place between subjects affected with transmissible diseases, of which the intensity thus increases, not by simple addition, but by a sort of arithmetical, or even geometrical progression. Such is not the language of facts, which show that in pure consanguinity, isolated from all circumstances of hereditary disease, resides, *ipso facto*, a principle of organic vitiation. The following family history affords a full confirmation of this statement:—

M. and Mme. A., belonging to a department in the south of France, had six children, two sons and four daughters. All six attained a pretty advanced age, and all married; three of them married cousins-german, the other three married strangers. The following table arranges them into two categories, comparing the number of children each had, with the number of children who died young:—

1. Marriages between relations,—

	Number of children.	Of which died young.
Miss M. A.	11	11
Mr A.	8	6
Miss C.	5	3
	<hr/> 24	<hr/> 20

2. Marriages with strangers,—

Mr V.	6	2
Miss A.	7	0
Miss L.	6	1
	<hr/> 19	<hr/> 3

It should be remarked that the three members of this family who lost the most children were not more delicate than the others, as might have been supposed had they been the three youngest of the family; they occupied the places 1, 3, and 6. The eleven children of M. A. all died of hydrocephalus at a very early age, one alone attained fourteen years. The six children which Mr A. lost also died very young; the survivors are delicate. Of the three children lost by Miss C., one died at the age of fifteen days; a second, though delicate, attained the age of three years; the third died when twelve years old, of inflammation of the brain and its membranes.

A similar fact has been communicated to me by a justly esteemed professional brother.

In 1809, M., a merchant, in good health, married his niece, a robust and healthy girl. Eight children were the fruit of the marriage; of these, seven died before the age of four years of convulsions or hydrocephalus; the only survivor is a daughter, now thirty-three years old, who is very delicate, and whom I have been attending during several years with the view of moderating the severity of a *psoriasis diffusa* which has existed from her earliest infancy, and the existence of which, perhaps, saved her from the fate of her brothers and sisters.

We sometimes find ANOMALIES OF ORGANIZATION result from the marriages under discussion. There is at present in the clinical ward of the Hôtel Dieu a patient with a peculiar deformity of each foot. On the left side the great toe is united to the second, the third and fourth are united in the same way,

the fifth is isolated. All the phalanges are perfect, the union being only by means of the soft parts. On the right side the toes are united in the same manner as on the left, only the phalanges have partly disappeared. This man tells us that his father and mother were first cousins.

In the case of the child of a man highly distinguished in chemistry, and who, contrary to the advice of his uncle, a man of great experience, had married his cousin-german, I found six toes on each foot.

The following fact is very remarkable, it is an example of a real endemic of *sexdigitism*, of an entire population, under the influence of the assigned cause, being affected with this anomaly. It was communicated to me by my learned friend Dr Potton, who had an opportunity of visiting the locality and inquiring into all the circumstances.

There is in the department of the Isère, a little village called Izeaux, isolated, lost, so to speak, in the middle of a little-cultivated, almost barren plain. The roads in this inhospitable district being bad, communication with a distance was formerly almost impracticable. The inhabitants of Izeaux, nearly abandoned to themselves, having little intercourse with the surrounding population, constantly contracted marriages among themselves, and therefore frequently with their own relatives. About the end of the last century, as the result of this state of things, there had been engendered and was kept up a singular monstrosity, with which thirty-five or forty years ago almost the whole population was affected. In this village men and woman had on their hands a sixth finger, on their feet a sixth toe. When in 1829, and again in 1836, said Dr Potton, I observed this singular phenomenon, in some of them this deformity was already in only a rudimentary condition, in several there was only a large tubercle, in the centre of which, however, was a hard, osseous body; a species of nail, more or less formed, terminated this appendix, which was fixed in the external lateral aspect of the base of the thumb. The person who accompanied me, though having no knowledge of medicine, made me observe that a favourable change was in progress, that a marked diminution of this monstrosity had been taking place since the customs of the inhabitants had been modified by the force of circumstances and their material progress, since the roads had been improved, and communication with those at a distance had become more frequent, since marriages had been contracted among strangers, since, in a word, a crossing of the breed had taken place. In 1847 Professor Duvay saw a manufacturer, a native of this locality, who had married and settled in Lyons. He was the subject of the deformity alluded to, but was the father of four children, who were free from it. At present this pathological anomaly has almost disappeared from the village of Izeaux.

Congenital DEAF AND DUMBNESS is one of the most frequent results of the marriage of relatives. I have recently had six opportunities of noticing the coincidence. One of these is the following:—A handsome, well-made woman called on me with her little boy, three years old, who had been deaf and dumb from birth; she was afraid that a similar misfortune would affect another son, four months old, who was completely deaf. In answer to my inquiries she stated that none of her relatives had been deaf, but that she had married her uncle. In another family of eight, where the parents were cousins-german, five were either deaf from birth, or became so soon afterwards, the other three were the subjects of various bodily and mental infirmities.

Dr Chazarain, in a thesis laid before the Faculty of Medicine of Montpellier, has brought together various facts which illustrate the same principle. From the position he held during several years in the Deaf and Dumb Institution of Bordeaux, he had peculiar advantages for investigating this point. Out of 39 boys in this institution, deaf and dumb from birth,

Were the offspring of relatives,	.	6	
Among whom 1 had . . .	.	2	brothers deaf and dumb
„ 1 had . . .	.	3	„
Total,		11	

Of 27 girls deaf and dumb from birth, 9 were the offspring of relatives; of this number 6 had among them 7 brothers or sisters affected with the same infirmity, making in all 16. It will at once be seen that the number of the individuals belonging to the category of the marriages of relatives is increased by a half if the brothers and sisters affected in the same way are taken into consideration, whilst amongst those, the father and mother of whom were not related, there is barely a sixth to be added.

At present it is known that France possesses 29,512 deaf and dumb individuals. According to their distribution in the different localities it appears that the greatest number is found in the mountainous departments where means of communication are difficult. The department of Ariège has the highest figure, 161 to 100,000 inhabitants. We know that in Ariège the marriages of relatives are so frequent that the priests of that department have several times applied to the Faculty of Medicine of Montpellier to issue an authoritative reprehension of such unions. The faculty has no doubt been right in declining to do so, but the very request shows how important the matter was considered. —*Gazette Hebdomadaire*, vol. vii., No. 37.

ON THE PROBABILITIES OF THE DURATION OF LIFE IN THE APOPLECTIC AND THE PHTHISICAL. BY DR BRÜCKNER.

Dr Brückner has collected materials for determining statistically the probabilities of life in the apoplectic and the phthical.

The results of his observations in the case of persons threatened with apoplexy are the following:—Fatal cases of apoplexy are on the increase; therefore the danger in our day is greater than it was in the last century. Hamburg appears to be the most dangerous residence for such persons; London is safer; mountainous countries are the safest. The country is less dangerous than towns. Winter is the most dangerous period for these persons; spring and autumn are less dangerous; summer is the safest. The first year of life presents the greatest danger from this cause; it goes on diminishing till the tenth year, and increases rapidly from fifteen to twenty. From this time it increases more slowly up to forty years, when it increases rapidly. About the sixtieth year the greatest increase of danger takes place; it only increases slowly from this time to seventy-five. From this age, the danger of apoplexy gradually diminishes. The years 48, 58, 66, are peculiarly dangerous. On the other hand, there is little danger of dying of apoplexy in the years 46 and 49. The male sex is (with the exception of London) generally more exposed to apoplexy than the female, particularly between the ages of thirty and fifty; whilst up to twenty, and then after sixty, there is proportionally more danger for the female sex. During the middle and earlier years of life, the well-to-do classes are in greater danger of apoplexy than the population in general. Where intermittent or pituitary fevers prevail, the danger appears to be greater. Sudden change of weather appears to increase the danger, as also does rain, whilst fogs (London) do not appear to have this effect.

With regard to the probabilities of being attacked with and dying of phthisis, Dr Brückner's inquiries give the following results:—The danger of death from phthisis is not so great at present as it was in former times. The female sex is in greater danger of phthisis than the male: London and Berlin are exceptions. This is particularly the case in youth, and up to the fortieth year; whilst in later life the danger diminishes more rapidly in the female sex than in the male. Persons who, from the nature of their employment, are exposed to the inhalation of dust, especially of mineral particles, are in great danger. Those who freely employ the organs of voice, or the muscles of the chest, particularly in the open air, are exposed to the least danger. Phthisis appears to be most frequent in the two temperate zones. In countries where inflammatory affections of the chest are endemic, the danger of phthisis is inconsiderable: these diseases, when endemic, exclude one another. In countries where intermittent fever is endemic, the danger of consumption is great: these diseases do not exclude one another. At a height of 1800 to 3000 feet

above the sea (in dry mountain air), the danger of becoming phthisical is slight; in low marshy districts, on the other hand, the danger is great.

With regard to the probable duration of life of such persons as are doomed to die of phthisis, Dr Brückner has deduced from his statistical investigations the following conclusions:—In a person of phthisical constitution, the danger of becoming affected with consumption increases up to the twentieth year, when it has reached its highest point. The danger may be reckoned as equal to 21·05 years of life, so that such a person at the age of 23 years has the same expectancy of life as a healthy individual at 44. From the thirtieth year, when it may be reckoned as equivalent to 17·42 years of life, the danger goes on diminishing. In the fortieth year it is equal to 13·94 years, in the fiftieth to 7·23 only. In the seventieth year the danger is at an end, a person of a phthisical constitution having the same prospects of life as any other individual of that age. Under similar circumstances, phthisical persons of the female sex die more rapidly and at an earlier age than males. The female sex reaches some years earlier than the male its highest point of mortality from phthisis.

If a person is actually affected with phthisis, his probable duration of life is 21 months and 9 days. A pregnant woman, during the duration of her pregnancy, is not likely to die of phthisis. After delivery, a consumptive woman has probably not more than six weeks to live. For all phthisical persons, the danger of dying is considerably greater in spring, less in summer and winter, and least of all late in summer, towards autumn. If a phthisical person removes from a warm to a cold climate, the danger of death is thereby greatly increased.—*Canstatt's Jahresbericht*, 1861.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1861-2. MEETING II.

Wednesday, 4th December 1861.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

I. CANCER OF THE PENIS.

Dr P. H. Watson showed a specimen of cancer of the penis, which he had removed from an individual forty years of age. At first the disease appeared so limited that it seemed as if the use of escharotics would prove sufficient for its cure. After two trials of these, however, it was found necessary to have recourse to amputation, which had accordingly been performed, and the result hitherto had been quite satisfactory.

II. MEDULLARY CANCER OF THE SCROTUM.

Dr Watson showed a specimen of cancer of the scrotum. The disease originated in the cellular tissue, and was covered by the skin, to which, however, it was only adherent at one point. On cutting through the textures the skin retracted, as is always the case, in consequence of the contractile property of the dartos. The specimen was a characteristic example of medullary cancer beginning to undergo softening.

III. CARIES OF THE HUMERUS.

Dr Watson also exhibited the head of the humerus, and the upper part of its shaft affected with caries, on account of which he had lately performed excision of the shoulder-joint in a boy. The specimen showed well the characters of the disease going on at the point where the bone is undergoing development, namely, at the point of union of the head of the bone and the shaft. Though the articulating surface of the bone was affected, *Dr Watson* did not doubt that this was secondary, for in adolescents the disease usually commenced in the situation indicated.

IV. ON THE BIFURCATED HEART OF THE MANATEE.

Dr James Young read the following paper by *Dr Phillippo* of Spanish Town:—

The heart of the manatee differs from that of other mammalia, with the exception of the rhytina and halicore, the two other species of the genus *phytophaga*, in being deeply cloven between the two ventricles.

As it has not as yet been described, the Hon. Richard Hill, the well-known naturalist, and my esteemed friend, requested me to draw up an account of it, as it tends to establish more intimately the analogy between the species.

Externally the left ventricle is seen at the first glance to be longer, broader, and thicker than the right, measuring $3\frac{3}{8}$ inches in length, $6\frac{1}{2}$ inches in circumference, and half an inch in thickness, while the right only measures $2\frac{3}{8}$ inches in length, $5\frac{1}{2}$ inches in circumference, and one-fourth of an inch in thickness. The length of attached portion is $1\frac{1}{8}$ inch, and the septum, when divided, is one-eighth of an inch in thickness.

The auricles are similar to those of other mammalia in external appearance; the right, however, being much larger than the left.

Internally we find that into the right auricle the superior and inferior venæ cavæ and the coronary vein open. The two former are separated by a large and membranous valve, which evidently directs the flow of blood from the vena cava inferior to the auriculo-ventricular opening. The annulus ovalis is large and well marked, and the fossa large and deep, but is quite closed, and is more distinct and larger than on the other side of the septum auricularum. The right auriculo-ventricular opening is large, being $2\frac{1}{4}$ inches in diameter, and the muscoli pectinati are larger than in the left auricle.

The right ventricle is very similar in general appearance to that of man, there being the usual chordæ tendinæ and columnæ carneæ; but the left valve, which is usually described as fixed in the human subject, from its attachment to the solid wall or septum ventricularum *without* a fleshy column, is here just the contrary, being attached by a fleshy column below the septum to what must be, in this animal, as yielding a portion of the ventricle as any other, and therefore making this a safety-valve equally with the right. The opening of the pulmonary artery is $1\frac{3}{8}$ inch in diameter, and the semilunar valves are each $1\frac{1}{8}$ inch in breadth from side to side. The artery is large and dilatable.

The left auricle has but three openings into it, two of the pulmonary veins being joined together in a common trunk which enters *by the side* of the two others. The fossa ovalis, though distinct, is one-eighth of the size of that in the right auricle, and the membrane of separation is here distinctly seen. The left auriculo-ventricular opening is $1\frac{3}{8}$ inch in diameter, and the mitral valves are, as usual, unequal in size, the larger being $1\frac{1}{8}$ inch from apex to base, and 2 inches across the base, whilst the smaller is 1 inch in length, and $1\frac{1}{8}$ in breadth. The smaller has no columnæ carneæ, but is attached by a broad tendinous band to the fixed septum above the juncture of the ventricles, and is therefore much less movable than the other. The semilunar valves are of the same size as those of the pulmonary artery, but the aortic orifice is smaller, being only $1\frac{1}{8}$ inch, on account, probably, of its superior contractility.

The peculiarity in the attachment of the left tricuspid and right mitral valve, not noticed, I believe, by the describers of the rhytina and halicore, taken in connexion with the herbivorous habits of this marine mammal, affords, I think, a satisfactory explanation of the ventricular bifurcation.

Having to spend some time under water whilst in the act of feeding, respiration, and consequently, pulmonary circulation must be impeded. A large amount of venous blood is thereupon collected in the pulmonary artery (which dilates to a great extent) and presses down the semilunar valves. In its turn the ventricle, unable to force its contents through the proper channel, would be overgorged, and probably paralyzed, but is by the aid of the peculiar construction of the tricuspid valves enabled to ease itself more readily than in other mammals, by a regurgitation of its contents into the large auricle. On the other hand, the firmer connexion of the smaller valve of the left ventricle with the septum tends to render regurgitation more difficult, and the strain is thus taken off the pulmonary and thrown on the general capillary circulation.

In conclusion, I may state that the animal which furnished the subject of these observations was about six feet long, and was considered to be young.

Dr John Struthers said that the communication was interesting, as showing that the manatus has the same form of heart as the other two genera of the herbivorous cetacea, the dugong and rhytina, have long been known to possess. The drawing, showing the external bifurcation of the ventricular portion sent by *Dr Phillippo*, has a close resemblance to the well-known drawing of that of the dugong. Although the distinguishing characters of the manatus were not mentioned in the paper, *Dr S.* took for granted that the author had satisfied himself that the animal he had dissected was a manatus, and not a dugong. *Dr Phillippo* deserved the thanks of the Society and of comparative anatomists for his contribution, and it would add to the obligation if he could send the heart itself.

V. CASE OF LIGATURE OF THE COMMON CAROTID.

Mr Redfern Davis of Birmingham communicated the following case of ligature of the common carotid artery:—

About two years ago I was sent for during the night by a physician, to see a man, who, in a paroxysm of jealousy, had just cut his throat with a pocket-knife.

When I arrived, I found the patient lying on a bed, whither he had been removed. On the floor of the room was a large quantity of blood, and the bed-clothes were sprinkled with the same fluid. The man, who, from loss of blood, was very pale and feeble, presented on the left side of the neck, just below the angle of the jaw, a rugged, transverse incision of about two inches in length. The windpipe and gullet were uninjured. For about half-an-hour I vainly strove to discover the source of hæmorrhage, succeeding only in finding some two or three small arteries, which I ligatured, but without materially, if at all, lessening the flow of blood.

Finding that the man was gradually getting weaker, and that by compressing the common carotid artery the hæmorrhage was completely stopped, I determined to tie that vessel.

I had previously made up my mind that, should a case occur where I was called upon to tie the artery, and should the place of selection be left to my own choice, I should ligature it in the cellular interval between the two heads of origin of the sterno-mastoid, as originally proposed by a French surgeon. Accordingly I did so, and found the procedure very easy, although certainly some difficulty was occasioned by the deficiency of light, one farthing candle being all I could procure. I interfered as little as possible with the cellular sheath of the artery. The artery was tied with a hempen ligature, as I feared to employ a metallic one, in case, if any accident should occur, it might be ascribed to its use. I had not at that time so much confidence in metallic ligatures as, from their constant employment, I have since acquired, or I should not have hesitated to use a silver wire, as I did some months ago in tying the popliteal artery, and as I am always in the habit of doing in cases of amputation. After the artery was tied, the bleeding entirely ceased; and the wound having been dressed, the patient fell asleep, and continued sleeping till nearly the middle of the following day. As a precaution, however, I left my own dresser to remain in the house.

The ligature came away on the twenty-first day, the wounds healed up entirely a few days afterwards, and my patient resumed his duties, which were very light, in two months from the receipt of the injury.

During the whole time nourishing diet was prescribed, but no wine, spirits, or malt liquor was allowed.

The feature in this operation to which I would especially draw the attention of the Society is the position where the common carotid was tied—a position which I think presents the following advantages over the situations where it is usually ligatured:—

1. The superficial position of the artery, enabling the surgeon to come directly upon it.

2. The muscles, not requiring to be turned aside, are in no way disturbed. Though this makes little difference at the time of the operation, it subsequently aids the free escape of pus.

I am aware that an objection may be raised on account of the position of the jugular vein; but it must be remembered that in the above case, in consequence of the previous loss of blood, the size of that vessel was very much diminished, and it therefore was not calculated to occasion that amount of inconvenience which it otherwise might have done. During the operation I never saw it; and had it been troublesome, it would have been very easy to have restrained its swelling by means of the fingers of the left hand, according to the procedure recommended in tying the common carotid artery.

Mr Edwards inquired of *Mr Davis* whether he had not dilated the wound and endeavoured to find the bleeding vessel, as it would have been just as easy to find it at the injured point as at the root of the neck. If the wound had been enlarged and the bleeding ends tied, there would always be the resource of tying the common carotid if the first procedure had proved unsuccessful; but *Mr Edwards* could not see why the Hunterian operation should be performed on account of a wounded artery which lay so near the surface. He did not wish it to be thought that he questioned the propriety of performing the operation which had been successfully, and he had no doubt most skilfully, performed, and he only asked this question because it involved a very important point of surgical practice.

Mr Davis stated that he had tried in vain to find the injured vessel, and that, although he had not used a knife, he had to a certain extent dilated the wound with his fingers and a probe.

VI. VALEDICTORY ADDRESS.

Mr Bell, in retiring from the position of President of the Society, delivered the following valedictory address:—

Before retiring from the honourable position to which your kindness raised me two years ago, I wish to thank you very cordially for all the courtesy and forbearance which I have experienced. My duties have been light and easy, so far as that could be secured by the whole bearing and conduct of the members; but I am deeply conscious of much shortcoming on my own part, when compared with many of my predecessors who occupied this chair, with qualifications both natural and acquired to which I can make no pretensions. At the same time, while acknowledging this with perfect honesty and good faith, I can say that I have endeavoured on all occasions, as President of your Society, to perform the duties expected of me to the best of my power.

Two of my esteemed predecessors in this chair, *Dr Seller* and *Professor Miller*, favoured us with an elaborate and interesting *resumé* of the written communications which had been brought before the Society during their respective terms of service. I shall not venture to follow them implicitly in this course, knowing that it could only be "*haud passibus æquis*;" but with your leave I shall try to recall, in a more cursory manner, some of the papers which have principally occupied our attention.

We all remember how admirably the case of the late revered *Dr Alison* was narrated to us by his friend and medical adviser, *Dr Newbigging*. The history,

from beginning to end, was unusually complete; and now, that it may be read in print, well deserves a careful perusal, from its intrinsic scientific value. But I need hardly say, that to every member of the profession it is invested with the deeper interest of referring to a man universally esteemed and beloved, whose person is still present to our mental vision, and whose gentle but earnest voice is still familiar to our ears. As kindred to this topic, I need hardly remind you of Dr Charles Wilson's eloquent and impressive tribute to the memory of his friend, Professor Retzius of Stockholm, another of those professional worthies who have exhibited the noble combination of scientific talent, earnestness and perseverance, with kindly feelings, self-denial, and a lofty estimate of duty.

Early in the session 1859-60 we listened to an able, carefully prepared, and instructive paper by Dr Alexander Wood, entitled Small-pox as it was, is, and ought to be. I need not remind the Society of the convincing manner in which the value of Jenner's great discovery was presented to our minds through the medium of statistical tables, or of the valuable suggestions in regard to a Vaccination Bill, with which the communication was wound up. In connexion with Dr Wood's paper, I may here refer, in passing, to a short but valuable notice which we had from Mr William Brown of the results of revaccinations performed by him at the Hospital for Orphan Children.

We all remember the clear and graphic description with which we were favoured by Dr Skae of that hopeless form of cerebral disease, "general paralysis of the insane." Coming as it did from one entitled to speak with authority upon that and similar subjects, this paper was, in my estimation, of peculiar value, to those of us especially whose opportunities of studying such subjects are comparatively rare, but who, nevertheless, are liable at any time to be called upon both to form an accurate diagnosis, and to take steps of vital moment to a fellow-creature, and bearing most intimately upon their own social comfort and professional reputation.

I am glad to think that my term of office as your President had the good fortune of receiving one of those very valuable septennial Reports on the Causes of Death among the Assured, which Dr Begbie, sen., has on three occasions presented to this Society. You will all agree with me in thinking that, although not a few of his inductions had been necessarily anticipated in the two former, this last Report was quite equal in importance to its predecessors, inasmuch as the greatly widened basis of facts gave new strength and stability to the conclusions both old and new which have been built upon them. As somewhat allied to this subject, we are reminded of another valuable communication, in which statistics held a prominent place—the paper by Dr William T. Gairdner upon the use of alcoholic stimulants in hospital medical practice. It was amply illustrated from the records of the Royal Infirmary, and contained many important thoughts upon a subject which needs to be regarded, as the judicious author was at pains to do, in its moral and social, no less than in its medical aspects.

Dr Robert Little of Singapore read to us, you will remember, an elaborate and instructive paper on Exposed Coral Reefs as a Cause of Fever in the East. It contained views and principles which were not merely valuable in reference to the localities mainly spoken of, but of sanitary importance in all regions of the globe.

In pathology we had several instructive communications. Allow me to mention Dr Warburton Begbie's paper on Ichthyosis, and his case of croup fatal in an adult. Both of these were characterized by that combination of accuracy in regard to details, and that trustworthy account of the literature of the subject, for which our fellow member is so well known.

Under this head I may recall to mind the very creditable paper by Dr T. Grainger Stewart on the waxy or amyloid form of Bright's disease, which gave rise to an interesting and animated discussion among those members who have paid much attention to the subject of morbid anatomy. I had nearly overlooked in this department a very interesting case of encephalocele brought before us by

Dr J. Matthews Duncan. This communication was complete in all its parts, embracing an accurate description of the outward appearance, illustrated by a coloured drawing, a history of the symptoms, an account of the dissection, and some ingenious speculation in regard to the development of the tumour, and the pathology of this and similar cases.

In surgery we had several papers and communications of great interest. Among these Mr Spence's case of rupture of the urinary bladder, holds a prominent place. It was remarkable in several respects. Although, as was discovered after death, a rent existed in the superior fundus, $2\frac{1}{2}$ inches in length, the organ became manifestly distended with urine, and the patient felt relief when the catheter was employed; while, after death, little more than two ounces of urine was found in the cavity of the pelvis, and there were hardly any traces of peritoneal inflammation. This well-told and important case gave rise to a good deal of interesting conversation among the surgeons present upon the occasion.

Dr Patrick Heron Watson brought before us a comparatively rare case of cancer affecting the urinary bladder in a female. He mentioned the important fact, which other members corroborated from their experience in analogous forms of disease, that the injection of morphia, by Dr Wood's method, into the neighbouring cellular tissue, afforded marked relief, when opiates by the mouth and rectum had proved unavailing.

Dr Handyside, you will remember, favoured us with a case of high amputation of the thigh, on account of spreading gangrene following a severe injury. The case, which terminated successfully under many adverse circumstances, derived some of its interest from the fact of acupressure having been exclusively employed in securing the divided arteries. A lengthened and full discussion of this new method followed the reading of the paper; but it was felt that time alone would show whether or not acupressure has any real advantage over the ordinary mode of arresting hæmorrhage.

More recently, a question somewhat germane to the preceding has been brought before us by Dr Gillespie, in his painstaking essay upon the use of the wire seton in the treatment of hydrocele. I need not say that he adduced overwhelming evidence to prove that the proposed innovation, besides being always troublesome and sometimes perilous, has in no case any advantage over the simple, safe, and sufficient procedure with which we are all familiar, the injection with tincture of iodine.

About the middle of last session we had a valuable communication from Professor Syme on a subject of great importance to the human race, could it be achieved—the radical cure of inguinal hernia. The procedure which he recommended as best suited for attaining the desired result, was in principle the same as that of Professor Wutzer, viz., the invagination of a portion of integument in the inguinal canal; but, as is usual with our distinguished townsman, the means of carrying out the principle were greatly simplified, so as to be quite within the reach of every surgeon: a piece of bougie, a bit of wood, a wax candle, with a needle and string, being substituted for an apparatus complicated, expensive, and comparatively uncertain in its application. Mr Syme concluded his remarks by shewing us a very satisfactory illustration of the practice—a young sailor, one of several patients upon whom he had already operated with success.

At a subsequent meeting Mr Edwards favoured the society, as you remember, with what he modestly called a Note on the history of radical cures of hernia. It was one of those lively sketches in which the author knows how to bring the surgical practice of our forefathers into broad relief, by juxtaposition with modern improvements, mingling scientific lessons with a vein of quaint and quiet humour.

As kindred to the subject of hernia, I may refer to the instructive case read to the Society by Dr P. Maclaren, of an abscess in the cellular tissue surrounding the cæcum, which simulated strangulated inguinal hernia. The author having every reason to believe that the latter disease was present, proceeded

to operate in the usual way; but coming upon an abscess, he evacuated the matter by free incision, and treated the case upon principles applicable to these peculiar circumstances. The patient, although far advanced in life, made at the time a complete recovery. Mr Maclaren's reflections upon the case were, in my opinion, highly creditable to his judgment and sound professional knowledge.

Two other communications in surgery remain to be shortly mentioned; one by Dr Scott of the 79th Highlanders, giving an account of a case in which the external iliac artery was tied for repeated hæmorrhages from the common femoral, caused by phagedæna supervening on a bubo; the other by Dr J. Y. Myrtle, on the local treatment of burns. The latter gentleman brought forward so much evidence in favour of sulphur as an application in such accidents, that many, doubtless, who are already familiar with its sedative properties in certain forms of cutaneous disease, will be disposed to give it a fair trial when a suitable opportunity shall occur.

In the department of therapeutics, properly so called, only two communications can be referred to.

Dr Thomas Anderson, already favourably known to the Society for his researches into the mutually counteractive properties of opium and belladonna, sent the details of a case of poisoning with datura stramonium, in which fifteen grains of muriate of morphia, administered in the course of eighteen hours, appeared to save the patient's life. The individual had been quite unaccustomed to the use of opium in any form, and therefore, as Dr Anderson justly argued, this remarkable tolerance of one poison when the other poison was in the system, seems to confirm his theory, that opium on the one hand, and, probably, all the solanaceæ which dilate the pupil on the other, are mutually counteractive.

The second therapeutic paper was from the pen of Dr Kidd of Elgin, and contained some striking illustrations of the beneficial effects, already recognised by many practical men, of ipecacuanha as an astringent in cases of dysentery and diarrhœa.

So much for the more formal communications; but, in looking back, it appears to me that the last session and the one which preceded it were in some measure characterized by the prominence which was given, at every meeting, to the exhibition of morbid specimens. We have always been accustomed, more or less, to this department of the public business; but so far as I know, it never occupied so much of our time and attention as during the period already mentioned. We are greatly beholden to the gentlemen whose opportunities, either in private practice or in the public hospital, enable them to contribute in this way to our instruction; for it keeps up and extends the knowledge of a very fundamental branch in the minds of many of us whose facilities for acquiring it are comparatively limited, from our being occupied in other pursuits. Let our friends to whom, in this particular, we have hitherto been mainly indebted, the physicians and surgeons of the Royal Infirmary, be assured that the trouble and inconvenience which they kindly submit to in bringing these morbid specimens for our inspection, are fully appreciated by their fellow members.

It has been alleged, that the conversations which follow the reading of a paper are sometimes apt to assume too much the character of a debate,—the speakers taking their sides and giving forth their sentiments with more energy and warmth than might be expected in the calm atmosphere of scientific inquiry and professional responsibility. This tendency, it is said, seems to be better suited to societies principally composed of younger men, whose chief aim it is, at least for the time, to sharpen mutually each others wits, and to cultivate the art of public speaking, than for those farther advanced in life; who, occupied with the anxieties of an arduous profession, desire to ascertain the experiences of their brethren, and to weigh every statement and opinion with candour and due consideration. I need not remind you that no state of mind can be less favourable for this calm estimate of facts and opinions than that which is engendered and fostered by the heat and excitement of public discussion. Besides, if I mistake not, such debates, however pleasant and full

of interest when maintained on equal terms by youthful contemporaries, are naturally more or less distasteful to the seniors and magnates of our profession when, with a name and reputation already achieved, they find themselves brought into the collision of hot, perhaps uncourteous, gladiatorship with much younger men, who have not as yet the same dignity to imperil. May not a dislike to such occurrences have the effect, and not without reason, of preventing some of those who are best fitted to communicate valuable instruction, and to give lustre to our Society, from favouring us on many occasions with their presence? But do not misunderstand me. Let us have, by all means, a free and unmeasured interchange of thought; but let it be done calmly and candidly; the controversial element thoroughly excluded, every one ready to listen to his fellow-members, to those especially whose attainments and ripe experience give them a strong title to deference and respect.

I have perhaps represented the tendency to antagonistic discussion in stronger colours than our recent experience may seem to warrant; for, within the last two years, there has been less of it than formerly; but these observations will not be superfluous, if they are in the smallest degree calculated to bring back amongst us any of the older and respected members of the Society, who have virtually withdrawn from our meetings. For, surely, it is most desirable that there should be an easy, unselfish, cordial interchange of professional knowledge and experience amongst those who are provided with the most ample stores. It is difficult to imagine any source of improvement more valuable to each and all of us, than such communications, carried on in a friendly, frank, conversational manner among a company of educated gentlemen, all interested in the advancement of sound professional knowledge, and all occupied from day to day in the responsibilities of actual practice. Before leaving this subject, I may be allowed to offer a single remark upon one department of our public business, which, although interesting and important, is apt, from various causes, to be too much thrown into the shade. I refer to what may be called, Medical News, understanding by that term, anything of recent or present interest which may appear likely to secure the attention of the members, as practitioners of the healing art. For example, it might be very suitable on such occasions to refer shortly to any prevailing epidemic or type of disease; or attention might be drawn to a new remedy or a new mode of applying an old one; or sometimes, perhaps, a remarkable case, still going on, might be briefly narrated in the view of eliciting suggestions as to its nature and management from the collective wisdom of the Society. Such communications made and responded to, without formality, in an easy trustful manner, will be attended by a double benefit; they will not only confirm and diffuse professional information, but encourage and strengthen those unselfish and liberal sentiments which ought to characterize all who belong to a calling so benevolent, so sacred, I had almost said so divine, as that which we are permitted to follow. Gentlemen, you agree with me in thinking, that this reflex benefit to which I have now alluded, is a natural consequence, not merely of the more casual interchange of facts and opinions, but of all our proceedings here; so that, in estimating the value, or, to use a modern phrase, the mission of this Society, we must take into account, over and above the positive knowledge which it furnishes, and the sharpening of interest and zeal which it produces, the great moral and social advantage already referred to. Allow this Society to languish or become extinct, and I am persuaded we should all feel not only that a valuable and very special source of instruction had been closed, but that we had lost many pleasant opportunities of cultivating the friendship and confidence of brethren, and of thereby cherishing those liberal sentiments towards them which the solitary practice of our profession, separated for lengthened periods from our fellows, has a tendency to discourage.

Hoping that you will excuse these cursory observations and agree, at least with their general import, I have once more to thank you all, in the most cordial manner, for the kindness and forbearance which I have experienced during my tenure of office.

ELECTION OF OFFICE-BEARERS.

The following gentlemen were elected office-bearers at the meeting of the Society held on Wednesday, December 4, 1861:—*President*—James Spence, Esq., F.R.C.S.E. *Vice-Presidents*—Archibald Inglis, M.D.; John Coldstream, M.D.; W. T. Gairdner, M.D. *Councillors*—Peter D. Handyside, M.D.; William Scott, M.D.; William Husband, M.D.; George W. Balfour, M.D.; Professor Miller; Thomas Keith, M.D.; Thomas Williamson, M.D.; William Turner, Esq. *Treasurer*—John Struthers, M.D. *Secretaries*—James D. Gillespie, M.D., 45 Castle Street; Patrick H. Watson, M.D., 10 Charlotte Square.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING III.

December 12, 1860.—Dr KEILLER, *President*, in the Chair.

I. POST-PARTUM HÆMORRHAGE.

Dr Alex. R. Simpson reported with regard to the puerperal uterus that had been shown at the previous meeting, that on careful examination some of the vascular orifices left exposed on the interior of the uterus after the separation of the placenta had been found still patent, and from these unclosed vessels the hæmorrhage of which the patient died had in all probability taken place. At the same time it had been noticed that there was a suffused portion of the cervix uteri, with a slight laceration in the centre, from which a certain quantity of blood must at some period have escaped. The polypoid body which Dr Wood had removed from the back wall of the vagina, and which Dr Moir had thought might have been the source of the fatal hæmorrhage had not been preserved, nor had the part of the vagina from which it sprung been removed from the body along with the uterus. It was, therefore, impossible now to determine what share this growth might have had in the bleeding; but a sufficient explanation of its occurrence was to be found in the patent condition of the torn placental vessels; and the house surgeon, who had had charge of the patient, averred that he had on more than one occasion felt the blood escaping from the interior of the uterus itself.

II. ABNORMAL LABOURS.

Dr Keiller related the history of (1.) A case of spontaneous expulsion, where, besides the head, the right arm, the left foot, and the funis, all presented at the os uteri. (2.) A case where he had succeeded in delivering a child by means of turning after the failure of repeated attempts by means of the long forceps. (3.) A case where a patient had died six days after the delivery of her first child under the following circumstances:—The patient had always been a delicate subject, and had spent eight years of her existence—from her fourth to her twelfth year—on a couch, in consequence of a disease of the spine from which she suffered, and which left her permanently deformed. Her first confinement had, accordingly, been looked forward to by the relatives with very great apprehension. On Tuesday, 4th December, labour set in, and in the afternoon of the same day the waters broke. On making a vaginal examination the lips of the os uteri were found to be in a curiously morbid condition, which gave rise to some little difficulty in ascertaining the true state of the labour. The vault of the vagina was filled with a mass, mostly soft, but with harder points in it, which he (Dr Keiller) at first imagined was a presenting portion of the placenta. The os uteri, however, was found to be so little opened as barely to admit the finger, and was quite smooth and natural internally, whilst this mass was distinctly external to it. The idea occurred to him for a moment that the peculiar feeling might be due to some of the soft growths occasionally met with

on the presenting heads of anencephalic foetuses; but the closed condition of the orifice immediately convinced him that the morbid material grew from the vaginal surface of the cervix, above which the rounded foetal head could be felt lying. During the examination portions of the soft and friable mass became detached from the posterior lip of the cervix, and were found on microscopical examination to contain no placental structure. The greater portion was smooth and soft, like the ordinary mucous membrane of the portio vaginalis; a firmer projecting portion had somewhat the appearance of a warty or condylomatous growth. The dilatation of the os went on very slowly; for, although the pains had become strong, the head was detained above the brim, and was kept from acting on the cervix. The action of the bag of membranes having been lost in consequence of their early rupture, Dr K. endeavoured to supplement it by the introduction of sponge-tents, by inflating an elastic bag passed into the os, and by stretching the lips by means of the fingers. After all his efforts, however, the os could only be dilated to such an extent as to admit three fingers. The patient had now been in labour for two days and a night, and, as she was extremely exhausted, she was set to sleep by the administration of an opiate. On Thursday morning (December 6) the foetal heart began to get weaker; the os was but little changed, but more dilatable. With the concurrence and kind assistance of Dr Simpson he (Dr Keiller) applied the forceps to the head of the child, in the hope that it might be dragged down on the os so as to effect its dilatation. A curvature of the spine existed at the lowest lumbar vertebra—the result of the spinal disease, from which the patient had so long suffered in childhood; and this curvature, which had prevented the head from descending under the force of the uterine contractions, now rendered the application of the forceps through the contracted os somewhat difficult, and presented such an obstruction as required the exercise of considerable force to drag the head through the pelvic brim. When at length the head was pulled down and brought to bear upon the os, the latter remained so unyielding that it was found necessary to make an incision into its anterior lip. This allowed the head to come down a little further; but before it could be fairly extracted a second incision had to be made into the posterior lip—the diseased part having been, of course, as much as possible avoided. The child was born alive, and was still living. The marks of the forceps were visible over the back of the head and over the left eyebrow, showing that the instrument had been applied less obliquely than is usual in long-forceps cases. The mother, however, did not fare so well. On Thursday, after the delivery was completed, her pulse was at 80; and on the following day it was still only 85. But on Friday night, without any discoverable cause, vomiting and purging set in; the pulse rose rapidly; and on Tuesday the 11th, at 2 o'clock P.M., the patient died. For some hours before her death she lay in a drowsy comatose condition, which it was not easy to account for. All opium had been withheld for many hours, but the pupils were dilated, and the patient had an apoplectic look. There was no post-mortem examination allowed in this case.

Professor Simpson remarked that, when he examined the patient, he thought it would be almost impossible to apply the forceps, the os uteri was so very firm and undilatable. But as craniotomy—the only alternative procedure—was certain to cause the infant's death, and might have been attended with laceration of the cervix, he had quite concurred with Dr Keiller as to the propriety of attempting delivery by means of the long forceps. The skilful manner in which that instrument was applied by Dr Keiller, and the success which attended its employment, had excited his admiration. He (*Professor Simpson*) thought the first case related by Dr Keiller was extremely interesting. He was not aware that any case had been recorded where spontaneous evolution had taken place in connexion with such a complex presentation. He remembered having asked his predecessor, Dr Hamilton, what was the proper line of treatment in such cases, and Dr Hamilton held that extraction of the child ought to be effected by pulling down the feet. Dr Simpson had met with only one case where the head, arm, foot, and cord, all presented simultaneously.

III. ON DISLOCATION OF THE OVARIES, ETC.

Mr Turner read a paper on displacements of the ovaries, and described a case where the left ovary had been detached from its connexion with the uterus, and had got adherent to the mesentery. (See *Edinburgh Medical Journal* for February 1861.)

Professor Simpson regarded *Mr Turner's* paper as one of great importance and interest. He had never met with any instance of the dislocation of the ovary described by *Mr Turner*, but he had several times seen fibroid tumours of the uterus, of the subperitoneal variety, which had become separated from the uterus and had contracted adhesions to other parts; and he had little doubt that the small hard tumour connected with the right broad ligament in *Mr Turner's* case, as well as the small body found free in the pelvis, were originally of this nature. Some years ago he saw a lady with a large fibroid tumour growing from the peritoneal surface of the uterus whilst she was pregnant. Her labour was easy, and there was but little hæmorrhage; but a few days subsequently she sank suddenly and died. On making a post-mortem examination it was found that the tumour had become adherent to the anterior wall of the abdomen, high up in the cavity; and as the uterus went on contracting after delivery, the pedicle of the tumour had become stretched till at last it gave way, and a fatal flow of blood took place from the vessels traversing it.

IV. PATHOLOGICAL SPECIMENS.

Dr Keiller showed (1.) A preparation of an ovum that had been expelled at the fifth week; (2.) A large and perfect dysmenorrhœal cast from a patient who is in the habit of passing them every two or three months.

MEETING IV.

January 16, 1861.—*Dr KELLER, President*, in the Chair.

I. INTRA-UTERINE CONVULSIONS.

Dr James A. Sidey read the following notes of a case of what he might call "intra-uterine convulsions:"—*Mrs T.*, æt. 40, a delicate, weakly woman, sent for me about 11 A.M., on the 10th of April 1860, to attend her in her eleventh pregnancy. I found her in labour, with the os fully dilated and the pains strong,—the head presenting in the third position. A few pains brought the head so low down that it pressed on the perinæum; but for two hours there was no farther progress made, although the pains were strong and forcible. As the four previous labours in which I had attended her had been very easy, I did not understand why the head still remained about the same place, especially as I could introduce my finger all round the pelvis; but on inserting my hand I discovered the hand of the fœtus hitched on the pubis. This I relieved with some difficulty, and a strong pain coming on, the child, a male, was born at 2 P.M. During labour the movements of the fœtus were very violent, leading me to suppose that it was convulsed. The patient did well. On examining the child it presented the appearance of being well grown and at the full period, but its arms were bent on its chest, with the elbows slightly extended from the sides, and the fingers drawn together like a cone. I attempted to pull the arms down, but could not with the amount of force I thought justifiable. The child cried lustily, and got on very well for a short time, when twitchings of the muscles generally came on, which soon ran into convulsions. In this state, ever twitched or convulsed, the child lived for seven months, when it died much emaciated. No treatment seemed to be of the slightest service except turpentine and cannabis indica, which had an evident effect in preventing the convulsions,—one fluid drachm of sol. mur. morphia, given accidentally, only produced sleep for one hour. The child died on 26th November 1860.

Previous to her confinement, the mother told me that she was certain that the

child would be ill, as she had experienced the same sensations as she had felt in her fifth and seventh pregnancies,—these children, a boy and a girl, having been born with the same disease (the one lived six, the other fourteen months). She said that after the seventh month, on each of these occasions, she could not go out in consequence (as she described it) of “shakings in her inside,” which were so severe as to make her “feel as if her inside would come out.” Her third child died of acute hydrocephalus at the age of six years.

Post-mortem examination was made by Dr Sanders, who has kindly furnished me with the following notes:—The body was greatly emaciated. The arms were in a peculiar position, being tightly drawn up; the forearms rigidly flexed upon the arms, so that they could not be straightened; while the hands were clenched, and the thumbs bent in towards the palms. The right leg was also contracted. The leg was flexed upon the thigh till the heel touched the buttock. The head was not larger than natural. On opening the cranium, a considerable amount of serous effusion was observed under the arachnoid, filling up the sulci. On section, the cerebral substance was of natural consistence, but the gray matter was paler than usual and apparently infiltrated with serum. The lateral ventricles were found much distended, and filled with serous fluid to the amount of about 5ij. in each ventricle. On examination the lining membrane of the ventricles was found much thickened, especially in the posterior and descending cornua. There was no tubercular deposit either in the ventricles or on the surface of the brain. The other organs of the body were not examined. The thickened lining membrane of the ventricles, viewed under the microscope, showed a number of compound granular corpuscles.

II. OSSIFICATION IN THE PLACENTA.

Dr James Sidey showed a small plate of bone about the size of a florin which he had removed from the surface of a placenta which had at several points undergone a kind of osseous degeneration.

III. RELAXATION OF THE SYMPHYSIS PUBIS.

Dr M'Cowan related the history of a case where a patient, 21 years of age, and pregnant for the second time, had suffered from relaxation of the symphysis pubis for some weeks before her last confinement. He had delivered her of her first child two years ago, after a tedious and difficult labour, which had to be completed by the use of the long forceps. She had made a good recovery, and continued to enjoy good health till she had been seven months gone in her second pregnancy, when she began to have great difficulty in walking, apparently from the rubbing together of the opposed surfaces of the pubic bones. Pressure over the symphysis caused pain. *Dr M'Cowan* expected that on this occasion the delivery would be easier; and on the 27th of December 1860, the patient had been delivered after less than two hours' labour.

Dr Keiller stated that he had seen a few cases where a certain degree of relaxation had obviously taken place during the progress of parturition. These had, for the most part, been cases of instrumental delivery; and he had observed that the separation between the ends of the bones had been increased whenever traction was applied to the fetal head. In one case, where the patient died subsequently, it was found, on making a post-mortem examination, that there was not only a separation at the symphysis pubis, but that there was also a distinct degree of relaxation in one sacro-iliac synchondrosis. He had made many experiments on division of the symphysis pubis, and had arrived at the conclusion that this operation does not of itself give any notable additional space.

IV. INTERRUPTED LABOUR IN A CAT.

Dr Alex. R. Simpson showed a preparation of the uterus of a cat, the two horns of which were of different forms and sizes. The left horn was very much contracted and narrow at its lower end, whilst at the upper free extremity it was somewhat dilated. On the interior the traces of two placental belts, near

the vaginal orifice, were distinctly visible, but in the cavity at the upper end, which contained some turbid fluid, the site of a third placenta was more difficult to be traced. The right horn was very much contracted at a point corresponding to the junction between its middle and lower thirds, but it was on the whole more equable in size, and less narrow than the other horn; on its interior the sites of three placentæ were easily distinguishable. The cat from which the preparation had been taken was only about seven months old when it gave birth, on August 27, 1860, to three kittens, at what was believed to be its full time. One of the kittens was born dead; the other two were drowned. She seemed less cheerful during the succeeding week than formerly; but there was nothing in her condition to call for special observation, till seven days afterwards, on September 2, she gave birth to other three kittens, one of which was likewise still-born. She had no milk for the other two, which were therefore drowned, and she seemed sick and ill, vomiting almost incessantly. When he (Dr Simpson) saw the animal the following morning, it seemed very weak; the eyes were dull and heavy; and it tottered on attempting to walk. That same evening it died. On dissection the following day the right lung was found to be very much congested, and the peritoneal surface was very hyperæmic, but there was no fluid in the abdomen and no lymph.

V. CRAMP AFTER LABOUR.

Dr Pattison mentioned a case where, about three hours after delivery, cramp in the legs and arms had supervened and kept the patient in distress for several hours. Chloroform gave temporary relief; 30 drops of Battley's solution of opium had no effect. A ligature bound tightly round the limbs eased the pain somewhat; but the patient was only finally relieved by being made to turn on the left side, when the pain at once disappeared. The same patient had suffered from cramp in two previous labours, but in a less degree.

VI. PECULIAR FORM OF LOCK-JAW.

Dr M'Cowan stated that he had lately seen an anomalous kind of lock-jaw in a young female who came to consult him, because the jaws had, without any discoverable cause, become fixed, so that she was unable to speak. Supposing that it might be dependant on some intestinal irritation, he ordered a turpentine enema, and stupes to the abdomen. Four hours afterwards, the condition of the patient being unchanged, he brought her under the influence of chloroform, put a cork between her teeth, and administered a large dose of croton oil. During the night the cork came out; and although the bowels had been freely moved, the patient found, on rising in the morning, that the jaws were still tightly closed. He (Dr M'Cowan) therefore put her again to sleep with chloroform, and again inserted a cork between the teeth; and after this there was no return of the lock-jaw. The patient had had no kind of hysterical fit, or any special disorder, and she was now quite well.

Dr Keiller was reminded by Dr M'Cowan's case of a patient who had become pregnant after having been subjected to the operation for torn perinæum, and who used to come to the Infirmary once a-week, during the early months of her pregnancy, with a slight degree of trismus, which was invariably relieved by making her inhale a mere breath of the vapour of chloroform.

SCOTTISH UNIVERSITIES COMMISSION.

In the *Edinburgh Gazette* of the 29th November, the Commissioners under the Act for making provision for the better government and discipline of the Universities of Scotland, and improving and regulating the course of study therein, published four additional ordinances. These ordinances fix the emoluments to be received by the Principals and Professors in the Universities of St Andrews, Glasgow, and Edinburgh, the salaries to be paid to the assistants of certain of the professors, and the sums to be allowed in defrayment of class

expenses. As these are points which affect in the highest degree the efficiency of the Universities, and as they must therefore be important in the eyes of all who take an interest in the progress of education in Scotland, we subjoin an abstract of the proposed arrangements.

The first ordinance (No. 21.) applies to the oldest of the Scottish universities—the University of St Andrews. By it it is proposed that, in addition to the sums heretofore annually granted to the Principal and Professors, farther sums shall in future be annually voted by Parliament, so that, with the estimated fees derived from the students, the emoluments of the Professors shall amount to a certain regular yearly income. Additional sums for university purposes are derived from the following sources:—Each student shall pay a matriculation fee of one pound for the whole year, or of ten shillings for the summer session; each candidate for the degree of Master of Arts shall pay a fee of one guinea in respect of each of his three examinations; and each member of the General Council of the University shall, on being first registered, pay a fee of five shillings, and thereafter an annual fee of two shillings and sixpence, unless he shall compound for these future payments by a single payment of one pound. From these funds, and from the fees paid by medical graduates—except such as are required for the purposes specified in a former ordinance—shall be paid the expenses of the library, the expenses connected with the meetings of the Senatus Academicus, of the University Court and of the General Council, and the salaries and wages of the officers and servants of the University, in so far as these expenses may not be otherwise provided for; and out of the surplus funds the Senatus Academicus may make payments towards the expenses of any class or classes in the University, including the cost of prizes, and of apparatus and materials, and also the remuneration of assistants or attendants.

This ordinance is accompanied with an explanatory schedule, from which it appears that the net yearly revenues of the United College of St Salvator and St Leonards are £1911, 18s. 10d., those of St Mary's College, £660, 5s.; while the proposed emoluments of the Principal and Professors are as follow:—

THE UNITED COLLEGE OF ST SALVATOR AND ST LEONARDS.

Chairs.	Emoluments.	Chairs.	Emoluments.
Principal.....	£541 14 0	Civil History and Natural His-	
Greek.....	509 18 0	tory.....	£369 18 0
Logic.....	459 18 0	Mathematics.....	509 18 0
Moral Philosophy.....	444 18 0	Medicine.....	319 18 0
Natural Philosophy.....	444 18 0	Chemistry.....	330 0 0
Humanity.....	509 18 0		

ST MARY'S COLLEGE.

Principal and Primarius Pro-		Ecclesiastical History.....	452 0 0
fessor of Divinity.....	£490 0 0	Hebrew and Oriental Lan-	
Divinity and Biblical Criticism.	427 0 0	guages.....	401 0 0

The emoluments of the Professors, as above given, include their fees from students, which, it is estimated, will amount, in the Greek classes, to £200; in the Logic, to £100; in the Moral Philosophy, to £85; in the Natural Philosophy, to £85; in the Humanity, to £200; in the Civil History and Natural History, to £80; in the Mathematics, to £200; in the Medicine, to £30; in the Chemistry, to £80; in the Primarius Divinity, to £47; in the Divinity and Biblical Criticism, to £40; in the Ecclesiastical History, to £30; in the Hebrew and Oriental Languages, to £30.

The share of the revenues of the Deanery of the Chapel Royal to be attached to the chair of Ecclesiastical History is estimated at £336 a-year. The new Parliamentary votes proposed amount to £944 a-year.

The second ordinance (No. 22.) refers to the University of Glasgow. Its purport is quite the same as that of the preceding, but there is a considerable difference with regard to details. It is proposed that the following shall be the emoluments of the Principal and Professors:—

PRINCIPAL.....£700 0 4

FACULTY OF ARTS.

Chairs.	Emoluments, etc.	Chairs.	Emoluments, etc.
Logic.....	£738 4 5	Mathematics.....	£662 0 0
Moral Philosophy	618 4 5	Assistant.....	100 0 0
Natural Philosophy	608 4 5	Practical Astronomy.....	270 0 0
Assistant	100 0 0	Civil Engineering and Me-	
Class Expenses	100 0 0	chanics.....	375 0 0
Greek.....	969 8 10	English Language and Litera-	
Assistant.....	100 0 0	ture.....	400 0 0
Humanity.....	969 8 10		
Assistant.....	100 0 0		

FACULTY OF DIVINITY.

Divinity	£600 0 0	Ecclesiastical History	£402 15 6
Oriental Languages	430 0 0	Divinity and Biblical Criticism.	436 0 0

FACULTY OF LAW.

Law.....	£540 0 0
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FACULTY OF MEDICINE.

Medicine.....	£410 0 0	Botany.....	£400 0 0
Anatomy	750 0 0	Materia Medica.....	270 0 0
Class Expenses	200 0 0	Assistant.....	50 0 0
Natural History.....	300 0 0	Class Expenses	50 0 0
Surgery.....	320 0 0	Institutes of Medicine	310 0 0
Midwifery.....	230 0 0	Forensic Medicine.....	210 0 0
Chemistry.....	620 0 0	Class Expenses.....	35 0 0
Teaching Assistant.....	100 0 0		
Laboratory Assistant.....	100 0 0		
Class Expenses.....	70 0 0		

The emoluments of the Professors as above proposed include the sums they will receive as fees from their students, which, it is estimated, will amount, in the Logic class, to £460; in the Moral Philosophy, to £320; in the Natural Philosophy, to £300; in the Greek, to £680; in the Humanity, to £680; in the Mathematics, to £350; in the Civil Engineering and Mechanics, to £50; in the English Language and Literature, to £200; in the Divinity, to £175; in the Oriental Languages, to £130; in the Ecclesiastical History, to £80; in the Divinity and Biblical Criticism, to £100; in the Law, to £230; in the Medicine, to £140; in the Anatomy, to £500; in the Natural History, to £100; in the Surgery, to £220; in the Midwifery, to £130; in the Chemistry, to £420; in the Botany, to £180; in the Materia Medica, to £170; in the Institutes of Medicine, to £160; in the Forensic Medicine, to £110.

The new Parliamentary votes proposed amount to £1325 a-year. The share of the Deanery of the Chapel Royal to be attached to the chair of Divinity and Biblical Criticism is estimated at £336 a-year.

The third ordinance (No. 23.) refers to the University of Edinburgh. By it it is proposed that the following sums shall be fixed as the emoluments of the Principal and Professors:—

PRINCIPAL.....£700.

FACULTY OF ARTS.

Chairs.	Emoluments, etc.	Chairs.	Emoluments, etc.
Humanity.....	£687 10 0	History	£230 0 0
Assistant.....	100 0 0	Rhetoric and English Litera-	
Mathematics.....	698 6 8	ture.....	410 0 0
Assistant.....	100 0 0	Practical Astronomy.....	300 0 0
Greek.....	737 4 4	Agriculture.....	150 0 0
Assistant.....	100 0 0	Theory of Music	420 0 0
Logic.....	672 4 4	Assistants	200 0 0
Moral Philosophy.....	502 4 4	Class Expenses	100 0 0
Natural Philosophy.....	622 4 4		
Assistant.....	100 0 0		
Class Expenses.....	100 0 0		

FACULTY OF DIVINITY.

Chairs.	Emoluments.	Chairs.	Emoluments.
Divinity.....	£637 2 2	Church History.....	£445 0 0
Hebrew and Oriental Lan- guages.....	400 0 0	Biblical Criticism.....	767 0 0

FACULTY OF LAW.

Public Law.....	£350 0 0	Medical Jurisprudence (<i>see</i> Fa- culty of Medicine)	
Civil Law.....	375 0 0	Conveyancing.....	£535 0 0
History (<i>see</i> Faculty of Arts)			
Scots Law.....	505 0 0		

FACULTY OF MEDICINE.

Botany.....	£880 0 0	Natural History.....	£765 15 2
Institutes of Medicine.....	640 0 0	Materia Medica.....	556 0 0
Practice of Physic.....	465 0 0	Assistant.....	50 0 0
Anatomy.....	1900 0 0	Class Expenses.....	50 0 0
Class Expenses.....	200 0 0	Clinical Surgery.....	550 0 0
Chemistry.....	1310 0 0	Medical Jurisprudence.....	410 0 0
Teaching Assistant.....	100 0 0	Class Expenses.....	35 0 0
Laboratory Assistant.....	100 0 0	Surgery.....	550 0 0
Class Expenses.....	100 0 0	General Pathology.....	445 0 0
Midwifery.....	550 0 0		

The emoluments of the Professors as above stated include their fees from students, which, it is estimated, will amount, in the Humanity Classes, to £500; in the Mathematics, to £500; in the Greek, to £550; in the Logic, to £470; in the Moral Philosophy, to £300; in the Natural Philosophy, to £420; in the History, to £80; in the Rhetoric and English Literature, to £210; in the Agriculture, to £100; in the Divinity, to £190; in the Hebrew and Oriental Languages, to £100; in the Church History, to £95; in the Biblical Criticism, to £95; in the Public Law, to £100; in the Civil Law, to £125; in the Scots Law, to £405; in the Conveyancing, to £430; in the Botany, to £680; in the Institutes of Medicine, to £490; in the Practice of Physic, to £365; in the Anatomy, to £1900; in the Chemistry, to £1310; in the Midwifery, to £450; in the Natural History, to £570; in the Materia Medica, to £456; in the Clinical Surgery, to £450; in the Medical Jurisprudence, to £310; in the Surgery, to £450; in the General Pathology, to £345.

The share of the Deanery of the Chapel Royal attached to the Professorship of Divinity is estimated at £336; the share attached to the Professorship of Biblical Criticism, at £672. The new Parliamentary votes proposed amount to £2903 a-year.

The fourth ordinance (No. 24.) applies to the University of St Andrews. It provides that the election of Rector in the University of St Andrews shall, as often as a vacancy shall occur, take place on the fourth Thursday of November next ensuing: Provided always, that, in the event of the statutory term of office of a rector being about to expire in the period between the fourth Thursday of November and the 31st day of December in any year, the election of a new rector shall take place on the fourth Thursday of November in such year; but the rector then elected shall not enter on his office until the expiration of the aforesaid statutory term, or until a vacancy shall actually have occurred.

ROYAL MEDICAL SOCIETY OF EDINBURGH.

OFFICE-BEARERS FOR SESSION 1861-62.

Presidents—John Duncan, M.A., Edinburgh; John Anderson, M.D., Edinburgh; Thomas R. Fraser, Calcutta; Dyce Duckworth, Liverpool. *Treasurer*—John F. Macfarlan. *Honorary Secretaries*—R. J. B. Cunynghame, Edinburgh; Arthur Gamgee, Edinburgh. *Curator of Library*—John Berryman, M.D., New Brunswick. *Curator of Museum*—William Russell, Edinburgh. *Sub-Librarian*—William Thomson.

ROYAL COLLEGE OF PHYSICIANS.

At the Annual Election Meeting of the Royal College of Physicians of Edinburgh, held on Thursday, 5th December 1861, the following office-bearers were elected for the ensuing year:—*President*—Dr David Craigie. *Council*—Dr William Seller, Dr Alexander Wood, Dr J. G. M. Burt, Dr T. Wright, Dr A. Keiller, Dr S. Somerville. *Vice-President*—Dr Alexander Wood. *Examiners*—The President, Drs Seller, Alex. Wood, Douglas, Paterson, Wright, Keiller, Pattison, Cumming, W. T. Gairdner, Duncan, J. W. Begbie, Haldane, Sanders, Wilson. *Treasurer*—Dr Andrew H. Douglas. *Secretary*—Dr D. R. Haldane. *Librarian*—Dr C. Wilson. *Curator of Museum*—Dr T. S. Wright. *Clerk*—Christopher Douglas, W.S. *Auditor*—K. Mackenzie, C.A. *Under Librarian*—John Small, M.A. *Officer*—Thomas Marshall.

UNIVERSITY OF EDINBURGH.

The total number of students (exclusive of those attending the divinity classes) who have matriculated this year at the University of Edinburgh is 1321. Of these, 510 are students of medicine. The corresponding numbers last year were 1420, and 555. It will thus be seen that there is a diminution this year, as compared with last year, of 45 in the number of medical students. It must, however, be borne in mind that the new regulations of the General Council regarding preliminary education came into operation last October, and there is no doubt but that a large number of young men have in consequence been deterred from commencing their studies this year. Indeed, most Schools have suffered to a considerably greater extent than Edinburgh, and the numbers above given indicate, under the circumstances, a highly satisfactory condition of the University.

(To the Editor of the *Edinburgh Medical Journal*.)

BELFAST, 16th NOVEMBER 1861.

SIR,—I have just read, in page 269 of the *Edinburgh Medical Journal* for September, the following:—"So long as the child is in the maternal passages such full and complete respiration cannot take place, and therefore," etc. On the 14th June last year I had a case where the feet presented. All went on easily; body and arms came forth (it was not only the first-born of its mother, but the first of twins); but the head was a dead fix for so long that I was afraid it would be dead, though the action of the uterus was good, and the child was evidently making convulsive efforts to breathe. I took the hint, inserted two fingers at the perinæum, and made a tube (the sides of which were my fingers, its face, and the posterior wall of the vagina) to convey the air to its mouth. I had previously had my fingers in its mouth, etc. It not only breathed, but *cried as lustily as ever a completely born child did*. I could now afford time to wait; but I never had more difficulty in bringing a head through the os externum than here. Now, this child might never have been born alive, and yet its lungs were inflated by "full and complete respiration," which it would be quite impossible to say *could not* have taken place (during the writhings and unaided efforts of a woman to deliver herself) without the aid of the "tube" aforesaid. I have no hesitation in saying this child could never have been born alive by any unskilled assistant, or by the unaided efforts of the mother; and yet it might have had such access to the air as would have made it utterly impossible for any medical man to tell "whether respiration occurred before or after birth."

It occurred to me to send you the above. You can take it *quantum valeat*.
—And meantime I remain, yours very truly,
JOHN W. BECK.

THE CHARING CROSS RAILWAY COMPANY AND ST THOMAS'S HOSPITAL, LONDON.—The award of Mr John Steuart of Liverpool, the umpire appointed by the Board of Trade, has just been made, for compensation to be paid by the Charing Cross Company for the purchase of St Thomas's Hospital and premises, and also for the damage sustained by the governors by reason of the execution of the works authorized by the company's Act. The sum awarded by the umpire as compensation, on the grounds stated, is £296,000. The claim of the authorities connected with the hospital, it will be recollected, was £750,000.—*British Medical Journal*.

NON-INFLAMMABLE FABRICS.—In these days of inflammable ladies, we (*Athenæum*) shall, perhaps, render good service by giving publicity to the discovery recently made by a French chemist, that muslin, lace, and all descriptions of light stuffs may be rendered fireproof by steeping them in starch mixed with half its weight of carbonate of lime, or, as it is commonly called, Spanish chalk.

PUBLICATIONS RECEIVED.

- Balfour,—God's Two Books; or, Nature and the Bible have one Author. By T. A. G. Balfour, M.D. London, 1861.
- Bedford,—Principles and Practice of Obstetrics. By Gunning S. Bedford, M.D., etc. etc. New York, 1861.
- Bombay, Transactions of the Medical and Physical Society of, for 1860.
- Jones,—General Outline of the Organization of the Animal Kingdom. By Professor T. Rymer Jones, F.R.S., etc. London, 1861.
- On the Alleged Dangers which accompany the Inhalation of the Vapour of Sulphuric Ether. Boston, U.S., 1861.
- Pathological Society of London, Transactions of the, vol. xii. London, 1861.
- Scoresby-Jackson,—Medical Climatology. By R. E. Scoresby-Jackson, M.D., etc. London, 1862.
- Wemyss,—On Legislation and Provision for the Care of the Insane. By Alexander Watson Wemyss, M.D., etc. Edinburgh, 1861.

PERIODICALS RECEIVED.

- Births, Deaths, and Marriages, Monthly Return of, for November. Edinburgh, 1861.
- Boston Medical and Surgical Journal,—Nov. 14, 21, 28, Dec. 5, 1861.
- British American Journal,—November. Montreal, 1861.
- British Medical Journal,—Nov. 30, Dec. 7, 14, 21. London, 1861.
- Bulletin Générale de Thérapeutique,—Nov. 15. Paris, 1861.
- Dublin Medical Press,—Nov. 27, Dec. 4, 11, 18, 1861.
- Gazette des Hôpitaux,—Nov. 23, 26, 28, 30, Dec. 3, 5, 7, 10, 12, 14, 17, 19. Paris, 1861.
- Gazette Hebdomadaire de Médecine, etc. Nov. 29, Dec. 6, 13. Paris, 1861.
- Gazette Médicale de Paris,—Nov. 23, 30, Dec. 7, 14, 21, 1861.
- Health and Meteorology of Manchester,—November 1861.
- Journal de la Physiologie, No. xv.—July. Paris, 1861.
- Madras Quarterly Journal of Medical Science, No. vi., October, 1861.
- Medical Times and Gazette,—Nov. 30, Dec. 7, 14, 21. London, 1861.
- Revue de Thérapeutique Medico-Chirurgicale,—Dec. 1, 15. Paris, 1861.

Publications and Periodicals for this Journal should be addressed—

To the EDITOR of THE MEDICAL JOURNAL,

Care of MESSRS OLIVER & BOYD,

Edinburgh.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Description of the Native Operation for Depression of Cataract in India.* By GEORGE SMITH, M.D., H. M. Madras Medical Service, Superintendent of the Hyderabad Medical School.

A CLASS of natives in India are professed oculists. Many of them travel about from place to place and earn for themselves no little reputation and emolument by depressing cataracts. They are, generally speaking, hereditary operators, and are, upon the whole, intelligent though uneducated men.

I propose, in this brief notice, to describe their operation for depression as it has fallen under my own observation, merely premising that they can distinguish pretty accurately between hard and soft or fluid cataracts, and that they restrict their operations, almost entirely, to cataracts of the harder kinds.

The operator makes his appearance with a small leather case, slung by a strap from his shoulder, in which is contained his "armamentarium," consisting of lancets of peculiar shape, copper probes with the handles variously ornamented, and T-shaped cauterics, the invariable accompaniment of every collection of surgical instruments in India.

Having examined his patient and satisfied himself that the case is one for operation,—in other words, having satisfied himself that the cataract is a hard or at least tolerably consistent one, that there are no adhesions confining the action of the pupil, that the pupil itself is of moderate size, and that the patient can distinguish day from night,—he proceeds to the operation.

First of all he sends for a small shallow earthen basin, into which he directs the attendant to put a few pieces of live charcoal, and then places the basin, along with a cup containing water, within easy reach of his hand. Untying the string of his operating case and laying out his small stock of instruments, he directs his patient to sit on the ground with his legs tailor-fashion, and arranges his position so that he may secure light without glare. He then sets himself down in the same attitude opposite and close to his patient, and directing the latter to place his open hand upon

his—the operator's—knees, in order to steady him as much as possible, he commences the operation.

Suppose the eye about to undergo operation be the left one, the oculist places his left hand on the patient's forehead and with his thumb gently raises the upper eyelid; then taking his lancet, the blade of which is wrapped round with cotton rag to within two lines of its point, he directs the patient to look inwards and upwards. Steadying his hand, by resting his little finger on the malar bone, and watching his opportunity, he makes a small incision in the sclerotic, parallel with and within two or three lines of the edge of the cornea, in the outer and inferior part of the eye.

This incision he makes quietly but firmly with a slight cutting motion and without any plunge or jerk. This done, the patient is permitted to close his eye. To relieve the uneasiness caused by the incision, the operator takes a little cotton wool, sprinkles a few drops of water over it, and pressing this wet dossil to the under surface of the earthen vessel containing the charcoal, lays it gently over the closed eye, which it soothes by its humidity and warmth. All this time he is conversing freely and cheerfully with his patient, whose equanimity is but little disturbed by the successive stages of the operation. The operator now selects from his collection of copper probes, one—a lucky one—and reopening the eye as at first, he passes the instrument up to its neck through the incision in the sclerotic, and directs its blunt point towards the centre of the eye-ball. The constricted neck of the probe is grasped by the sclerotic, and the instrument is then allowed to hang down upon the patient's cheek, unsupported except by a small dossil of lint or cotton rag placed between its handle and the cheek. The eyelid is again dropped, and the conversation, which has not been interrupted for a moment, flows on as usual. When the slight excitement from introduction of the probe has subsided, the eyelid is again elevated, and the operator, allowing the handle of the probe to rest loosely on his middle finger, retaining it in its position by the slightest possible pressure of the forefinger, sweeps gently backward, until the point and edge of the probe come in contact, visibly, with the upper and anterior part of the lens. He then, with an upward motion of the hand, gently and with the least apparent pressure depresses the lens and its capsule vertically downwards. The act of depression completed, the operator brings his hand down to the position from which it started—and an elegant “*tour de main*” it is—and allowing the probe to rest upon the patient's cheek, drops the upper eyelid and permits the patient again to close his eye. After a few seconds he reopens the eye, and finding the pupil clear and the lens showing no indication of rising, he withdraws the probe and the operation is completed.

If necessary, depression is repeated several times. It is well,

however, for the patient if the lens remain below the level of the pupil after a first, second, or third sweep, as, after that, the oculist appears to be at his wit's end, and either abandons altogether the risen cataract, or, continuing to depress it with more force, bruises the iris, tears the pupil, or dislocates the lens into the anterior chamber, causing, it may be, ultimate destruction of the eye itself.

The operation ended, he applies over the eye a pledget of lint moistened with water and sprinkled with turmeric, securing it in its place by a small rag ingeniously buttonholed, and slipped over the patient's ears. In most cases the actual cautery is then applied to the temple of the affected eye.

I may notice that these operators are ambidextrous, and that they perform the operation with much steadiness and delicacy of touch. In expert hands this operation is a wonderfully successful one. The habit of the native is so inexcitable and so seldom does his general system sympathize with local disease, that, in the great majority of cases, nothing beyond slight conjunctival congestion follows the native operation for depression. I have met with less success in depressing cataracts with the common straight or curved needle, attributable, not to want of dexterity or care, but possibly to the fact, that the iris more especially seems to tolerate the introduction and rough motions of a blunt instrument like the native probe much more readily than the prick of the pointed and delicate needle of the scientific oculist.¹ Restricting my remarks to the results of operations by reclinacion on hard cataracts, I am free to admit that success proved, as far as I could learn, to be in favour of the native operation. In the treatment, however, of soft and fluid cataracts, the oculist's needle occupied successfully the whole field abandoned by the native operator.²

The native oculist has no idea of the structure of the eye; he looks upon cataract as a drop of water which has fallen into the cavity of the eye from the brain, and which undergoes a gradual process of induration until it becomes "a pearl of vision," and fit for displacement by depression. He can distinguish between hard

¹ If the principle be correct that the iris tolerates more readily the seemingly rough movements of a blunt probe than the prick of the most delicate needle, then may we safely say that the native operation is superior to ours in its practical recognition of such principle. It is certainly interesting and instructive to observe how tolerant the iris is, not only of the movements of a blunt probe, but of the cuttings, draggings, and lacerations of iridectomy, whilst it resents in the most manifest manner the apparently microscopic injury to its structure, resulting from transfixion, by a sharp-pointed and delicate needle.

² I have performed the native operation, and have made a practice of teaching it to my pupils, being convinced that, in the case of young operators at least, it is expedient to encourage the safe and simple native method of depressing the cataract, in preference to risking the loss of human eyes, by placing in their hands instruments which are only safe when experience has given confidence to the judgment, sharpness to the sight, and steadiness to the hand of the operator.



Fig. 1.



Fig. 2.



Fig. 3.

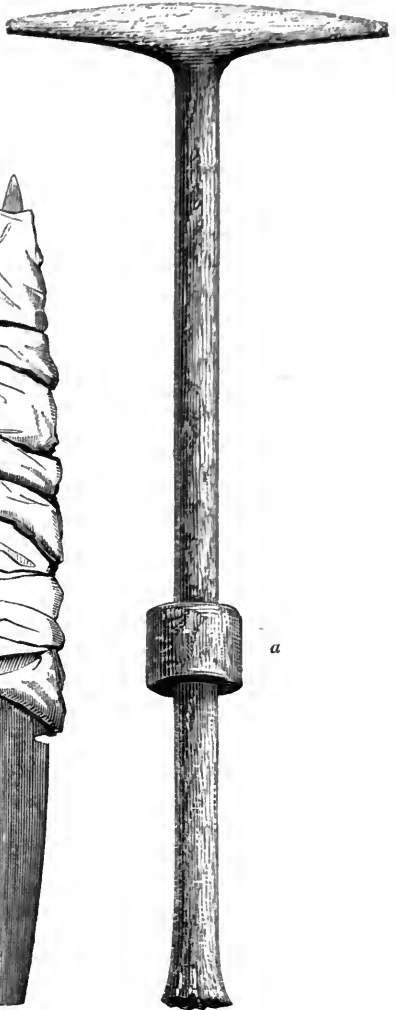


Fig. 4.

and soft cataract, and declines, as I have said, to operate upon any cataract not of a hardish consistence. He knows nothing of belladonna, but carefully examines the pupil for adhesions. Should he be deceived as to the consistence of a cataract, and should the capsule of a fluid cataract be ruptured in the attempt to depress, he at once withdraws the probe and gives up the case. Should the lens be dislocated by the probe into the anterior chamber, it is a case of "nusseeb"—destiny—and the operator is helpless. It is remarkable, however, to observe how nature, even under such untoward contingencies, brings her conservative powers to remedy malpractice and preserve vision. I have seen a case in which, during operations performed ten years previously, both lenses had been dislocated into their respective anterior chambers by a native oculist, and being left there, had gradually become absorbed, until all that was left was a small round opaque ivory-looking nucleus, lying in the lower part of the anterior chamber of each eye, having formed, as it appeared, attachments to the cornea and iris, and being situated in both cases below the axis of vision. Sight was good, and no trace of inflammation or of excitement of the eyes existed.

The only instruments used by the native oculist are the probe, lancet, and cautery;—a short description of each may prove interesting to those who are not, like Indian medical practitioners, familiar with the subject.

The instruments from which the appended drawings have been made are now before me: they were purchased on the completion of an operation by a native oculist, in which he had used them.¹

1. *The Probe*.—This instrument is of copper, about $4\frac{7}{10}$ inches long. It is very light, and has an elegant shape. About $\frac{5}{16}$ ths of an inch from the point, which is blunt, there is a neck, where the instrument is very small; from this point the probe gradually increases in size towards the handle, the central part of which is roughened slightly by minute circular milling. In some probes this part of the instrument is fancifully ornamented. Around the lower part of the neck are wound a few cotton threads (Fig. 1, *a*), which, acting as a shoulder, prevent the probe from passing into the eye further than a distance of from $\frac{5}{16}$ ths to $\frac{6}{16}$ ths of an inch. Anterior to the neck the probe has a prismatic form, being three-sided, blunt-edged, and terminating abruptly in a blunt point. The weight of the probe is about 46 grains.

2. *The Lancet*.—The lancet is a coarse piece of steel, of the shape represented in the drawing (Fig. 2). It is about $4\frac{5}{16}$ inches long, and is in fact a narrow-shouldered lancet, with its blade prolonged into a rude kind of handle. The point of the lancet is bright and moderately sharp. When used, the handle and blade, up to within two lines of the point, are wound round with a strip of

¹ They cost a mere trifle, and may be made up in any bazaar of any village in India,—a matter of some importance both as regards convenience and economy.

lint or cotton rag (Fig. 3). The shape and length of the instrument render it handy enough for the purpose for which it is used. It is seldom, however, kept clean or entirely free from rust.

3. *The Cautery*.—This is a small clumsily-made piece of iron of a T-shape (Fig. 4). The cross part is heated and applied vertically to the patient's temple, leaving a mark not quite two inches long, and about two lines broad at its central part, whence it diminishes gradually to both extremities. A small movable ring (Fig. 4, *a*), on the handle of the cautery, enables the operator to grasp the instrument without burning his own hand.

Some of the native oculists are said to be lithotomists also, performing the operation "on the gripe," not always unsuccessfully. I have never met with such operators, nor have I ever seen the native operation for stone.



ARTICLE II.—*On the Occurrence of Aquish Diseases on board Ship*. By JEFFREY A. MARSTON, M.D., Assistant-Surgeon, Royal Artillery.

It is well known that observations have been made by men of different nations, in every part of the globe, upon fever and its relations to malaria. Chemists, physical geographers, geologists, travellers, physicians, and historians, have examined and inquired into malarious influences, and the means by which such influences are generated. After all that has been written upon the subject, and all the minute and abstruse inquiries which have taken place into the origin and nature of malaria, we cannot now be said to know anything of its *real* nature.

Though all observation would tend to the belief that it is a specific agent, a material and portable substance, yet it has hitherto eluded the grasp of the subtlest analyst. We know a great deal about it—its habitats and geographical limits—the agents at work in its generation,—the seasons, latitude, altitudes, and temperatures influencing its presence and production, as well as the means by which it may be destroyed, shut off, or rendered innocuous. Wherever malaria exists it exerts essentially the same influence upon the animal frame, and drags with it its well-known links of disease, differing widely enough in degree, but bearing characters in common, that never fail to strike even a casual observer. From the more imperfectly characterized atonic dyspepsias, debilities, and neuralgias, we pass by gradations upwards through intermittents, remittents, diarrhoeas, dysenteries, until we reach the bilious fevers,—to end in the last and most terrible link in the chain of evils—yellow fever.

Boudin, in his essay on Medical Geography, relates the following circumstance (which has been quoted by Watson in his last edition):

—In July 1834, 800 healthy soldiers were embarked in three transports at Bona, to be conveyed to France. In one ship (the *Argo*), having 120 men, 13 died of malignant fever; and 98 out of the remaining 107, were landed at the Lazaretto, Marseilles, suffering from one or other form of paludal fever. The two other transports had not a single fever case on board. An investigation having been instituted, it was proved, that in the affected ship (*Argo*), four casks, in the hurry of embarkation, had been filled with water from a marsh at Bona. This water was supplied to the soldiers. The crew were supplied with separate water by the victualling department of the navy, and were all healthy.

Parallel with this is the following fact:—Experiments instituted upon sheep have shown that a disease—hydræmia with cachexy (rot)—has occurred after drinking marshy water; that such waters, if they be thoroughly filtered and purified, do not appear pernicious to the animals; and, lastly, that the above disease can often be cured by quinine.

Major L'Estrange, Royal Artillery, tells me that he noticed, whilst travelling in Albania, that the shepherds never allowed their flocks to drink from streams and ponds they encountered on their way, but always watered them at known places. A great outcry was raised against any shepherd who failed to use this precaution. If I understood him aright, he supposed that two sets of diseases arose,—the one, a parasitic affection, flukes; the other, a general disease, such as that indicated above. Spite of the very strong remarks of Dr Ferguson upon the prevalence of malaria in drying soils, which, from their nature, could not permit of any vegetable growth, there is a dominant opinion that malaria has some connexion with the products of vegetable decay. In short, the general opinion seems to be, that the morbid agent is some organic compound of carbon and hydrogen, the result of putrefactive or other chemical changes affecting the vegetable substances present in soil; that it is capable of solution in water or the aqueous atmosphere; and that it is vaporizable under the influence of solar heat, and precipitable by cold,—following the laws affecting dew. We have the important observations of Pictet and Dr Wells, that upon perfectly calm and clear nights the temperature of the atmosphere increases with the distance from the earth:—thus, at 220 feet above the surface, they found the temperature 10° higher than at the height of 7 feet above the ground. In temperate latitudes, the result of various observations also goes to prove, that where the mean daily temperature of the water of a river exceeds 60° F., and is at the same time in excess of the minimum temperature of the air, the waters will exhale gases the products of putrefactive organic decay. The whole group of terrestrio-miasmatic diseases has an intimate connexion with the geological formation of the earth. They show a remarkable affinity for the tertiary strata, while malaria appears scarcely to attach itself, or only in an ephemeral way, to the primary and

more compact formations. Mr Featherstonehaugh and others have tried to indicate the intimate relation between malaria and ferruginous soils.

Dr E. Burdel, in his *Researches upon Marsh Fevers*, studied during a ten years' residence at Sologne, says, that he does not consider the miasm an organic matter suspended in the air, but a peculiar fluid emanating from the ground, in which is produced a special electro-chemical action under the influence of solar heat. He makes out that the period of danger is mid-day. The mid-day sun has a peculiar influence upon the air,—the ozone is then at its minimum,—and he says, that anything which causes vital depression, moral or physical (merely taking cold), may give rise to paludal poisoning. He traces the first paludal impression (not the fit) to be felt about noon.

Accepting, as we must, the general laws inculcated by the accumulated observations of so many scientific inquirers, we are nevertheless met with exceptions of great difficulty, inasmuch as there appears to be everything present in such exceptions for the production of malarious diseases, yet these do not appear. At Minehead, Somersetshire, I remember there was a large flat, marshy district, stretching along the borders of the Bristol Channel, but no intermittent fevers prevailed there. The late Dr Marshall Hall has also remarked upon this, I think, in his *Practice of Medicine*. In Malta there is a small guardhouse, situated at the extremity of Fort Manost, and surrounded by mud, sand, and decomposing seaweed, alternately wetted and dried according to the prevalence of certain winds. The site is low, and the smell of the decomposing organic matter obvious enough to the sense, yet I could never learn of any case of malarious fever among the men supplying that guard. Upon the other side of the Great Harbour, at its head, lies a marshy district, which at one time attained a morbid notoriety for malaria, and diseases of a malarious type are still prevalent there. Upon *a priori* grounds one would have been led to conceive the former place as the more malarious.

Dr Aitkin, in his admirable Text-book, appears to regard the malarious poison as always generated in and by the earth, as he states that malarious fevers are not generated on shipboard. Dr Watson, on the other hand, sums up the agents at work in its production as the four ancient elements, viz.:—Earth, air, fire, and water.

The fact is too often lost sight of, that while ague is a proof of the existence of malaria in a given district, the absence of a disease of such specific characters is no proof of the absence of malaria. Dyspepsias, neuralgias, attacks of pseudo-fibrous rheumatism, diarrhoeas, anæmiæ, and splenic diseases, may prevail in a district in which true ague rarely, if ever, appears.

The causes of these differences are very complex and difficult of explanation.

My own impression is, that in the absence of a positive knowledge of the exact composition, state, or condition of matter known as malaria, moisture (evaporation) is the *efficient* cause; and that if there be a sufficient exposure on the part of individuals, you will almost invariably have some one or other product allied to ague in its pathology, symptoms, and treatment. It is the object of this paper to prove this, by the succeeding remarks and cases.

It is a very curious problem, why persons who have long resided in tropical or demi-tropical climates without any apparent disease (farther than those very gradual and progressive deteriorations and deviations from the English constitution, marked by the complexion and skin, may be indications of disease) should, upon the voyage home, suffer from ague. There can be no doubt that climate and exposure to solar heat engender in the constitution a remarkable proclivity to the action of malaria. In some such cases a malarious poison has been already acting, or has been imbibed, to be called into play, upon the occurrence of any, even the slightest, determining cause. In others, however, the enervating effect of a warm climate appears rather to act as a powerful predisposing cause to the aguish type of disease.

It is well known that on board a troop-ship it is almost impossible to maintain that cleanly appearance of the troop-deck so dear to the eye of a captain, by dry scrubbing merely. The dirt and grease from various sources, and the tramping with naked and moist feet, soon produce an appearance as if the deck "sweated." To remedy this, the decks are flushed and swabbed. Disease and ague have followed so frequently from this, that I wonder the subject has not attracted more attention.

Many years ago, a barque put into Lowestoft harbour, with the whole crew, from the captain to the cabin-boy, suffering from some form of ague. The explanation was this. The crew were all perfectly healthy before sailing from a port in the north of Europe, and continued so for several days. They had a cargo of deals or fir on board. These had been removed from the water where they had been retained, and were shipped wet. During the voyage, to use the captain's expression, they "sweated." This circumstance occurred in the practice of Dr Jeffrey of Lowestoft.

The brigade of artillery to which I have the honour to belong, embarked from Corfu on the 24th, from Malta on the 29th August, and disembarked at Portsmouth upon the 7th September. The voyage was a capital one,—the health of the troops very good (we brought nearly every man sick in hospital). By the direction of the captain, the troop-deck was flushed and swabbed after breakfast.

The accompanying table will show the number of cases of undoubted aguish disease, all dubious ones having been cast aside. The cases within brackets came from Vido, where ague is known to prevail; but none of them had suffered from that disease whilst there stationed.

TABLE OF CASES.

Name.	Age.	Disease.	Time, and Means of Treatment.	Remarks.
Gr. J. H.	27	{ Febris intermitt. (quotidian). }	20 days—Quinine.	{ From Corfu. First fit 2 days after em- barkation. }
Gr. B. H.	25	{ Neuralgia (paroxysmal). }	12 days—Quinine.	From Corfu.
Gr. N. O.	29	{ Febris intermitt. (quotidian). }	12 days—Quinine.	From Malta.
Gr. J. S.	27	{ Diarrhoea, with masked ague. }	11 days—Quinine and Opium.	From Malta.
(After Disembarkation.)				
{ Gr. J. A. }	44	{ Febris intermitt. (Tertian). }	7 days—Quinine.	{ From Vido. Long foreign service. Effects of climate on frame well marked. First attack 2 days after disembarking. }
A. (son of above)	16	Do. do.	12 days—Quinine.	{ Began on shipboard. Boy now in hospital with anaemia and splenic enlargement. }
J. A. (daughter of above)	10	Do. (quotidian).	8 days—Quinine.	{ First fit 2 days after landing. }
A. (infant of above) . . .	7 mo.	Do. do.	6 days—Quinine and Alkalies.	{ Diarrhoea on shipboard. Mother noticed that it was "blue" at times during the 3 days preceding disembarkation. }
M. K.	26	Do. do.	4 days—Quinine.	{ Admitted 7 days after landing. }
J. E.	30	Do. do.	6 days—Quinine.	{ 7 days after landing. Followed a drink- ing-bout. }
C. M'C.	28	Do. do.	4 days—Quinine.	{ Admitted to hospital 8 days after landing. Followed a debauch. }
Sergt. T. B.		{ Aguish disease? Haematuria—increased size of spleen. }	Quinine and Iron, preceded by Saline purge.	{ Alluded to in text. }

N.B.—No cases since admitted, which is strange, considering the nature of the soil in many parts in the vicinity of the different forts and barracks at Portsmouth.

The case of Sergeant T. B. was peculiar. He was admitted into hospital, more than two months after disembarkation, suffering from hæmaturia. It appeared that some years before, whilst stationed in Malta, he had suffered in a similar way during the prevalence of cold and wet weather. The symptom in question proved a very transient one. He had an anæmic, waxy appearance, the gums and mucous membranes being exsanguine, and the nails blue. He stated that he was in perfect health; but, upon minute inquiry, he remarked that, preceding the attack in Malta, he had shivered a good deal upon two or three occasions. Whilst on board the troop-ship, he "shivered" from no apparent reason; and since the cold and wet weather set in, he had noticed similar phenomena. He had noticed that he had gradually become paler since his arrival in England. He could trace no peculiarity whatever as to the periods of these transient attacks, but said that his hands burned afterwards, and he sweated about the forehead sometimes, but not always. Had never been in the Mauritius. The urine, examined two days after the appearance of blood in it, appeared healthy. It had sp. gr. 1018; acid; pale amber hue; non-albuminous; no trace of casts or blood-discs by microscopic examination. Physical examination detected increased splenic dulness (three inches below ribs), and a tendency to pot-belly conformation. The treatment, pursued with marked benefit, was quinine and iron.

Of course, it may be alleged that in all these cases the disease had its origin, not upon shipboard, but in the climates from which the patients came, and that the moisture stood in the relation of a determining cause to a recurrence or paroxysmal expression of the disease already existing. This, however, cannot be the explanation of the cases occurring on board the barque, for she sailed from, and had a crew composed of men coming from, a part of Europe in which malarious diseases are not endemic, nor even present.

We are reminded, too (by way of parenthesis), that the late Professor Alison thought that he had traced the cause of the prevalence of croup upon certain days of the week to the habit of the poorer classes of white-washing and scrubbing their dwellings upon definite days.

Into the etiology and pathology of other affections, not ordinarily classed with ague, I need not enter, as the subject has been comparatively recently discussed by Dr Peacock, "Upon the Aguish and Remittent Fevers prevailing in the Metropolis," and in some excellent papers by Dr Handfield Jones.

ARTICLE III.—*Another Case of Amputation of the Thigh at its Upper Fourth, in which ACUPRESSURE was successfully employed;—with Remarks.* By P. D. HANDYSIDE, M.D., F.R.S.E., formerly Senior Ordinary Surgeon to the Royal Infirmary.

A. A. M., aged forty-one years, of strumous habit, temperate, a native of Edinburgh, received, in 1839, while at Leeds, and leading a wandering life, a severe burn along the right thigh, knee, and leg, from a mass of live cinders that fell on him while he, being exhausted, lay asleep before the fire. He was taken to the Leeds Infirmary, where he remained for four months and a half; at the end of which time there existed an extensive and obstinate ulceration, for which he was transferred by the parochial authorities to Edinburgh, and remained under treatment in the Royal Infirmary for five weeks. He then left the house with the burnt surface partially cicatrized. Thereupon the ulceration opened anew; and, in July 1840, he returned to the Infirmary, and came under my care; when, in addition to treatment for an ophthalmic affection, he had his limb attended to, which, he states, cicatrized before he left the house. A. A. M. afterwards went to Sheffield, where, for an eruptive complaint, he took eighteen blue pills, by which he was profusely salivated. So powerfully was his system affected by this medicine, that mercurial tremours, attended with paralysis of the bladder, supervened. Subsequently the ulceration broke out afresh. After this he wandered to London, and lay in St Bartholomew's under treatment for a spreading ulceration of the old cicatrized surface. Thence he was returned to Scotland, as formerly; and, in April last, during fourteen days, lay again in the Infirmary here, but without improving in his condition; and before leaving that institution, although his life was in extreme peril from an excessive discharge of matter, he refused to submit to amputation of the limb.

When asked in May 1861, by Dr M'Cowan, to visit A. A. M., I found him emaciated, debilitated, and labouring under exhausting irritative fever, with extremely feeble intermitting pulse of about 160 per minute. But as he was apparently free from organic disease—an opinion in which I was confirmed by Professor Simpson—and as the sufferer was anxious for me to remove his limb, I placed him under preparatory treatment for the operation. During this time the greatest obstacle encountered in the way of progress, notwithstanding the large and lofty apartment occupied singly by the patient, was the putrid emanations that arose from the profuse discharge, mixed with blood, issuing from the ulcerated surfaces, as well as from abscesses in the popliteal cavity, which it had become necessary to open freely. A plentiful use, however, of Condyl's patent fluid proved of the greatest service in deodorizing the vitiated air of the room and lobby.

Accordingly, A. A. M. rallied somewhat from a state of extreme

prostration, and now presented the symptoms of pure hectic only. His pulse had fallen to about 130, though it was still feeble and intermitting.

On June 22d, at noon, I removed the limb in the presence, and favoured with the assistance, of Professor Simpson, Drs M'Cowan, Oliver of Prestonpans, Alexander Simpson, and Mr Edwards. The method of amputation by rectangular flaps, as advocated by Mr Teale of Leeds, I partially followed, adopting certain of the modifications recommended by Mr Spence.¹ In order to avoid the marginal cicatrices of the burn, I had to remove the limb at its upper third, and had to select an antero-internal very short flap, including not more than a third of the circumference of the thigh, and a postero-external flap about three times the length, and at its base twice the breadth of the other. The former flap was made by transfixing the limb, grazing the inner margin of the bone, as in the ordinary double-flap amputation, and carrying the knife in the gentlest curve downwards and inwards; while the latter, or long flap, was made by dividing in a curve first the skin only, and after retraction of it to the extent of more than an inch, I then directed the knife's point upwards to the bone, revolving it round which—after Alanson's mode²—I divided the remaining two-thirds of the fleshy parts of the thigh, forming them into a hollow cone, so as to avoid redundance of muscle. Before applying the saw, both flaps were farther retracted, and the bone was divided not far below the *rochanters*.

The principal vessels thus lay on the internal flap. The means used to arrest the bleeding were seven short well-tempered needles, (four of No. 4, women's size, and three of No. 4, men's); to each of which was attached, for its subsequent withdrawal, fine iron wire, according to the method introduced into practice by Professor Simpson.³ The unimportant vessels were submitted, as usual, to torsion.

Twelve points of wire suture, deeply inserted, served next to retain the flaps in contact. At this stage of the operation, the effects of the chloroform wearing off, the artery of the sciatic nerve—which, just before the flaps were brought together, had been shortened about 2 inches—bled freely; and to avoid the removal of the stitches, a needle 5 inches long, flattened towards its point, was—at Dr Simpson's suggestion—brought down between this nerve and the *os femoris* through the skin of the region of the hip, and made to emerge at $5\frac{1}{2}$ inches peripheral distance from its point of entrance. The effect of this acupressure was instantaneously seen in the bleeding being arrested.

The patient bore the operation well, having been supported with

¹ Edinburgh Medical Journal, Nov. 1859, Case III.

² Practical Observations on Amputation. By Edward Alanson, Surgeon to the Liverpool Infirmary. Second edition, London, 1782, p. 53.

³ See references in my former paper on this subject in this Journal, vol. vi., p. 510.

wine at intervals. Very little blood was lost. On removal to his bed, the stump was supported by a pillow and a sling, wetted lint was applied over its extremity, and an opiate with whisky was given. At 2 P.M. he suffered from thirst, exhaustion, and irritability, but was cheerful. The opiate in whisky was then repeated. At 8 P.M. his pulse, still intermitting and feeble, had however fallen to about 120. Another opiate in whisky was then given.

June 23d. The patient is feverish and depressed, and complains of great pain in the back; pulse less intermittent. Has had tea and toast. The long needle was removed from under the sciatic nerve at the *twenty-fifth hour* after the operation, without trace of bleeding. The pain in the back becoming more severe towards night, a strengthening plaster was at the patient's own request applied, and the opiate in whisky repeated.

June 24th (forty-ninth hour). Pain in the back relieved; pulse only slightly intermittent; and patient looks better. I withdrew five of the short needles from their corresponding smaller arteries, by simple traction of their connecting wires. On endeavouring likewise to remove the needles from the *femoral* and *profunda*, I found that I had inadvertently allowed their connecting wires to become mutually entangled, so that no farther traction was made at that time. No trace of bleeding followed these manipulations. A. A. M. has partaken of light food, but is dyspeptic. Towards evening the margins of the flaps had assumed an unhealthy aspect, and I therefore removed some of the stitches, and applied the tincture of myrrh. At this time I recollected that, in burying the point of the needle that occluded the *femoral* artery, I had made its point emerge for a moment through the skin. Making firm pressure, therefore, around that point of skin, I now succeeded in causing the needle's point again to protrude; on seizing which with the forceps, I extracted the needle entire, and with the scissors liberated it from its connecting wire. In a day or two after, I withdrew the needle from the *profunda*, by firm traction of the two entangled wires. In neither case did any bleeding follow, except what was evidently traceable to scratching of the granulations by the entangled bit of wire. The patient had at bedtime his opiate and whisky as usual.

25th. The stump yielded a slight discharge of pus. A lotion of zinc was now used; and wine was given occasionally, together with an opiate in whisky and water, after the forenoon and evening dressings. *26th.* The patient is weak, with a returning severe pain in his back. For this at his own request a fresh strengthening plaster was prescribed. Wine is to be given thrice a-day, and animal diet. *28th.* He takes his food well; his pulse is about 90; and he feels easier. *29th.* Discharge lessening. Has his steak and wine, besides his opiate and whisky and water twice a-day as usual, as his irritability is great. Pulse to-day is 140. *30th.* Less discharge. Pulse 120. *July 1st.* The last of the stitches was this day re-

moved. The purulent discharge is healthy. The tongue is dry. The pulse is limping and 125. Had ʒiij of wine during the dressing of the stump. He complains of cough, for which a liniment and mixture were prescribed. 2*d.* Less cough. Pulse 110. 3*d.* Pulse 108. Continues the opiate and spirits twice daily after the dressings. 4*th.* Is much better. To have quinine and sulphuric acid. Pulse 120. 5*th.* Pulse 115. 6*th.* Pulse 110. Takes his food well, and asks for porter instead of wine. 7*th.* Pulse 115. Takes his tonic and cough-mixture thrice, and his opiate twice, daily. 8*th.* Pulse 117. 9*th.* Pulse 115. 10*th.* Pulse 112. 11*th.* Sleeps well. Has full diet, for which his appetite is good. Pulse 115. 20*th.* The face of the stump is contracting. Discontinue the quinine and acid, and use the sesquinitrate of iron externally and internally. Continue the opiate at bedtime only.

From this date the health of the patient and the appearance of his stump greatly improved. His pulse varied from 80 to 70, and gradually became less intermittent. His appetite continued good, his bowels regular, and his cough left him. Aug. 20*th.* On visiting A. A. M., I found his pulse 72, and regular. His stump and entire body are become stout. During the entire progress of this case I received very efficient assistance from the Messrs Millar, Black, and Vartan, pupils, who furnished me with notes of the case. Oct. 31*st.* To-day I made a cast of the stump.¹ Jan. 8, 1862. A. A. M. is robust and well. His pulse remains at 72, and is natural.

REMARKS.—1*st.* From the condition of the skin, this amputation could not have been performed lower down the limb.

2*d.* The patient was indebted for his recovery from the shock mainly to the large doses of opium, and to the free use of stimulants. He was largely benefited, too, by the internal as well as the external use of the sesquinitrate of iron. He has regained sound health, and possesses an excellent stump.

3*d.* From its contributing favourably towards our surgical statistics, I feel warranted in asking the attention of the profession to this narrative. The results of 300 cases of amputation at Guy's Hospital, as recorded by Mr Bryant in vol. xlii. of the Transactions of the Royal Medico-Chirurgical Society, p. 70, show, under the head of *Pathological Amputations* (or amputations from necessity) *through the thigh*, a fatal result in 18 out of 100 cases, or 18 per cent., or 1 case in 5.5. Farther, by reference to Mr Bryant's tables, it will be seen that out of 39 cases of *pathological amputations through the leg*, 3 only were fatal, or 7.7 per cent., or 1 case in 13. And, as a whole, of these amputations through the *thigh* and *leg* taken together, 15 per cent. proved fatal.

4*th.* Recovery in the foregoing case, that of a man above forty, of very feeble habit, much shattered by long years' purulent dis-

¹ Now in the Museum of the Royal College of Surgeons, Edinburgh.

charge, and deficiency of food and clothing, and so weak that a mere puff of wind seemed enough to blow him over, may perhaps be connected with the small loss of blood sustained during the operation. This seemed to be due, in part, to the greater expedition with which I was enabled, *by acupressure*, to close the bleeding vessels by means of a single pair of hands.

5th, Experience now enables me to express a decided preference for *short over long needles*.¹ By the use of the former, I have found it as easy as by the use of the latter to command the flow of blood from the large as well as from the smaller arteries. Transfixion of the skin is thus avoided—a material point in dealing with a texture weak in its action, and farther weakened by contact with the knife.² The accidental entanglement in my hands, unperceived, of two of the wire threads in the foregoing case, shows, however, that some care in manipulation is necessary; so that no blame can really be attached to acupressure, as such, if it be only properly applied.

6th, Another testimony is here afforded to the success of acupressure in closing summarily, within a few hours, the large vessels divided in amputations of the extremities. So far as I am aware, no instance of failure in closing an artery, by the use of the long or the short needle, has yet occurred, nor has secondary hæmorrhage taken place under this mode of procedure. This observation, if correct, contrasts favourably with our current surgical practice. Indeed, the liability to secondary hæmorrhage that attends the use of the ligature on a wounded artery is well expressed by Professor Syme³ as follows:—"If a ligature has been applied, the ulceration by which it is separated, if too rapid or extensive, may cause a bleeding from three days to as many weeks after the infliction of the injury." After another remark, he continues thus:—"It has been proposed to obviate the immediately fatal effect of excessive hæmorrhage by transfusing the blood of another individual into the veins of the patient."

7th, The cases of amputation generally, in which acupressure has

¹ The application of short instead of long needles in acupressure is described by Dr Simpson as follows, in the *Medical Times* for April 21, 1860:—"Arteries as large even as the femoral, exposed in operations and wounds, can be effectually and easily secured by common short sewing-needles introduced from the *surface of the wound*. The needle is dipped down into the soft tissue on one side of the artery which it is desired to close, then raised up and bridged over the artery itself, and subsequently pressed downwards and onwards into the soft tissue beyond. A slender iron or silk thread passed through the eye of the needle, and left out between the lips of the wound, serves as a simple means of withdrawing the needle itself as soon as the artery is sufficiently occluded."

² See a comparative observation by me on this point in the *Transactions of the Medico-Chirurgical Society of Edinburgh*, published in the *Edinburgh Medical Journal*, vol. vi. p. 571.

³ See the paragraph ("Secondary Hæmorrhage") in the second section ("Wounds of Arteries") of the seventh chapter of his *Principles of Surgery*, second edition, p. 81.

been employed, range, I am informed, from thirty to forty in number; of which I hope soon to be able to present a summary that may prepare the way perhaps for a cautious induction. These include at least six cases of amputation through the thigh.¹

8th, It is interesting to observe, *first*, how very slight is the amount of acupressure that is necessary² in order to close a bleeding vessel; *secondly*, for how short a time pressure need be maintained³ in order to produce that effect; and, *thirdly*, how such pressure has not hitherto been productive of any unpleasant symptom, or even of any appreciable effect on the adjacent veins or nerves. It has been suggested indeed that, in the foregoing case, the great pain in the back that was felt on the day after the operation was due probably to compression of the great sciatic nerve by the long needle employed to control its central artery. It seems clear, however, that this lumbar pain experienced by the patient after the operation depended simply on cold and exposure on the operating table, or, as he himself expressed it, "to cold and the hard bed on which he lay on his back;" for while removal of the long needle did not lessen the pain he endured, which became more severe towards night, and was relieved once and again by the use of common strengthening plasters, applied at his own suggestion (a remedy which, while resident at Sunderland, he had had recourse to for cold), it gradually disappeared from his feeble and exhausted habit under a freer use of wine, an animal diet, and a tonic draught.

¹ See a notice of five of these cases in the Journal of Pract. Med. for Nov. 1860, English edition, p. 481.

² See Professor Simpson's remarks on this subject in the Edin. Med. Journal for Jan. 1860, p. 645; the Dubl. Hosp. for Jan. 2, 1860, p. 7; and the Med. Times and Gaz. for Feb. 11, 1860, p. 137.

³ Illustrative of this remark is the following extract from Malgaigne's Man. de Méd. Operat., 6th edit., Paris, 1853, p. 41:—"Procédé de Koch.—Après toutes les amputations, l'opérateur ramène le lambeau sur la plaie, et le maintient par les bandelettes agglutinatives. Une compresse languette est fixée sur le trajet de l'artère, à l'aide d'une simple bande. On donne au moignon une position un peu élevée, et un aide exerce avec la main sur le moignon une douce pression continuée pendant une ou deux heures, et même aussi longtems qu'on y ressent des pulsations considérables. Quand elles ont cessé, et que l'appareil est teint en rouge par la lymphe qui a suinté, Koch assure que tout danger d'hémorrhagie consécutive a disparu, pourvu que le malade reste tranquille. De semblables promesses n'étaient pas de nature à séduire beaucoup les chirurgiens, et ce procédé est justement abandonné."

EDINBURGH, 11 HOPE STREET.

ARTICLE IV.—*On the Elephantiasis Scroti of Bengal.* By J. FAYRER, M.D., F.R.C.S.E., First Surgeon and Professor of Surgery in the Bengal Medical College.

THESE tumours are good examples of simple cutaneous out-growths occurring in the scrotum and integument of the penis, corresponding to the parts invested by the dartos, and devoid of fat. I am not sure that the dartos determines the growth of these extraordinary hypertrophies, but I am inclined to believe that it has some influence on, or connexion with it,—the diseased structure seldom extending beyond its limits in those particular cases in which the scrotum is the seat of the disease. The structure of the tumour is that of the natural tissue, but exaggerated; and it is not only the white and elastic fibrous elements that are hypertrophied, but also the smooth muscular fibre of the dartoid tissue which appears to share equally with the other structures in excessive growth. The inter-cellular inter-fibrous spaces are also distended and filled with an albuminous gelatinous fluid. These tumours are of various degrees of density or succulence, some being naturally much firmer and more compact than others. Some, and especially the smaller ones that are rapidly growing, are more vascular than others,—magnitude, in my experience of them, not being a measure of vascularity. They are not generally the seat of painful sensations, excepting during the periodical paroxysms of fever which attend their growth, when they are congested, tense, hot, and often very painful; at other times, beyond the inconvenience caused by size and weight, they give rise to no uneasiness. Under ordinary circumstances, they vary in appearance, sometimes being flaccid, at others, tensile, contracted, and corrugated by the action of the dartos.

The fever which attends their growth recurs at stated intervals, once, twice, or oftener in the month, and is attributed by the natives to the moon and its changes. The hypertrophy is the local expression of a specific constitutional disease, or diathesis; and in this respect they differ from other fibrous tumours or discontinuous out-growths elsewhere. There appear to be no limits to the size these out-growths attain; the largest I have seen was about 50 inches in circumference, descending nearly to the man's ankle, and weighing, when removed, and the blood, serum, and fluid had drained away, between 60 and 70 lbs.; but much larger ones are on record, and tumours upwards of 100 lbs. in weight have been removed successfully. It is remarkable how little the general health and nutrition seem to have suffered in some of the largest of these cases. The natives of Bengal are peculiarly liable to this form of elephantiasis, and though they suffer equally as much from the same disease affecting the extremities, yet it is the exception, rather than the rule, to meet with scrotal elephantiasis combined with the disease affect-

ing the limbs; but two of the fourteen cases I have recorded were so affected, and they only slightly.

Dr Allan Webb, who has had much experience of this disease, is of opinion¹ that there are two varieties of it; one due to a peculiar intermitting fever occurring twice in the month, at the lunar changes, called, by the natives, moon fever. The other variety has for its origin the syphilitic poison, appearing from two months to two years after infection. "The first, or simple elephantiasis, generally invades the scrotum in men, the labia in women; and the second, or venereal variety, generally begins in the prepuce in men, and the nymphæ in women. The tumour of the simple elephantiasis is commonly smooth; the venereal variety, tuberculated on its outer aspect. The advent of the simple variety is often ushered in with considerable fever, pain, and swelling. The venereal variety is slow, chronic, and more free from pain and fever."

"In the advanced stages, when the tumours have acquired great size, they appear to increase alike without pain or fever by simple growth or increase of their proper substance."

Dr Webb also expresses his opinion that, however manifested, "elephantiasis, whether in the genitals or in the limbs, is essentially one and the same disease;" and that, when of long standing, accompanied as it must be by periodical fever, its effects are not limited to the external and apparent changes; but others, most serious as respects the life and health of the individual, will be always found in the internal organs, and very likely in the blood itself. Fatty degenerations of various organs are also, he says, concomitant affections with elephantiasis; and this he urges as a matter of great practical importance with reference to the mortality, — sudden death taking place after the operation for removal of the tumour, and which might be erroneously attributed to the operation or the effects of chloroform, when it was due, in fact, to fatty degeneration of the heart itself. These suggestions of Dr Webb's being of the greatest practical value, should be borne in mind in all cases of operation on this disease, especially with reference to the administration of chloroform.

Elephantiasis prevails throughout Bengal, and it affects all races and ages, and, speaking generally, both sexes: the labia and nymphæ of the female being almost as liable to it as the scrotum of the male. The Bengalee is by far the most subject to the disease of all the races found in Bengal; but it has been seen in the European, Eurasian, Portuguese, Armenian, and others. I have not seen it in any but the pure native; but Dr Webb and others, I believe, have seen it in the European. I have seen, in European girls of pure blood, a swelling of the lower extremity, accompanied and intensified by periodical attacks of feverish excitement, attended by irregularity of the catamenia, which very closely resembled the ordinary

¹ Vide Indian Annals of Medical Science, No. 4, p. 635.

elephantiasis of the leg in the Bengalee. The East Indian Eurasian race is by no means exempt, and many cases have been recorded of the disease affecting numbers of that section of the inhabitants of Bengal. It is in some instances, apparently, hereditary; but more frequently not so.

The tumours are generally of the natural shape of the scrotum, —the raphe, in the form of a tuberculated ridge, being in the middle line. Some are smooth or marked with lines indicating the original rugæ; others are tuberculated and nodulated all over, but especially at the lower part. The penis is generally buried far out of sight, but in some cases, where the prepuce has shared in the disease, it remains prominent, and occasionally is elongated, twisted, tuberculated, and hypertrophied to an extraordinary extent. The orifice corresponding to the aperture of the urethra is a depressed umbilicated opening, through which the urine is voided. In addition to the disease of the integuments, the tunicae vaginales are frequently found much thickened, distended into enormous hydroceles, containing quarts of serous fluid. The testicles are often chronically enlarged and dependent from thickened and elongated spermatic cords.

The heavier tumours render the patient almost unable to walk or stand upright, from the great burden and the dragging sensation they cause. The moderate-sized ones are the source also of great misery, not only from the obliterations of the penis and other inconveniences their presence causes, but from the weight and traction that are inseparable from them. The patient moves with difficulty, the back bent and the legs wide apart. The life is one of great discomfort and mental depression, and the sufferer gladly seeks for the relief that operation affords. The operation for removal of a scrotal tumour is simple enough, but it requires determination and expedition. It needs also the aid of several intelligent assistants.

Before commencing, it is well to have the tumour raised and supported in a vertical position for half-an-hour, to drain it of blood as much as possible; then, the patient having been placed in a recumbent position on an ordinary table, with the nates brought near the end of it, he is to be put under the influence of chloroform, and the incisions are to be commenced.

The instruments required are, a long steel director to guide the knife in cutting down to the penis, a large scalpel, an amputating knife, artery forceps, and plenty of silk ligatures; a few of the small bull-dog forceps also are useful in temporarily controlling inconvenient hæmorrhage from divided veins.

Several assistants are required to hold back the legs, raise the penis and testes, support the tumour, and rapidly secure the numerous bleeding points. These being provided, the operation may be begun. The director is to be introduced into the passage at the bottom of which lies the glans penis, and that organ exposed, by laying open with either the long catlin, or a sharp-pointed bistoury,

the dense tissue covering it. The prepuce is frequently found quite healthy and dragged forward. If so, it is well to reflect a portion of it as a future covering for the penis, which, if well managed in the subsequent dressing, becomes a better integument than the cicatrix tissue which must otherwise take its place. In the event of the prepuce being involved, or even suspected of being involved in the disease, it should be carefully dissected away like the rest of the thickened tissue. Having exposed the penis, it is to be raised and carefully dissected out, with or without the prepuce as the case may be; it must be carefully held back, and out of the way of the next incisions, by an assistant, and care must be taken in clearing it out of the morbid tissue, not to divide the suspensory ligament, or difficulty will attend the subsequent treatment in keeping it in its proper place with reference to the testes, which may be drawn by the granulation and cicatrization above the penis.

The next step is to make a deep and bold incision down to the tunica vaginalis on one side. In a large tumour several incisions will be needed before the tunica vaginalis is exposed, which probably will be found much thickened and distended with quantities of fluid, forming large hydroceles. These should be laid open, and if the tunica vaginalis be much thickened, it should be removed; if not so affected, and the testicle not enlarged, it need not be interfered with. The testicle, with or without the covering, according to circumstances, is then, like the penis, to be dissected out and reflected, being held upwards with the penis; a similar proceeding is to be carried out on the opposite side, and then, the genital organs being held up towards the abdomen, the tumour is to be removed by connecting transversely the three vertical incisions already made, and then, either with the scalpel or the amputating knife, the remaining portion of the neck of the tumour is to be cut through: it is well before separating it, to mark out on the perinæal aspect by an incision, the line at which the removal is to be completed. During the operation the bleeding vessels are to be commanded by the fingers of assistants, and subsequently ligatures (twenty to thirty are frequently necessary) are to be applied: any large vein may be controlled by the bull-dog forceps. It is well that even the most minute bleeding points should be ligatured; otherwise, when reaction occurs, there may be hæmorrhage, and it may be necessary to remove the dressings, whereby much suffering is occasioned to the patient. The bleeding having been perfectly controlled, the testes, with their elongated cords, often extended to the length of a foot or even eighteen inches and much thickened, are to be raised and applied to the surface of the wound; the penis is to be enveloped in a fold of oiled lint, and thus kept apart from the testes, which are also covered and supported in position by oiled cloths.

The appearance of the elongated and thickened cords and tunicae vaginales, with the distended vessels ramifying on their surface, is often exceedingly curious and beautiful. It is very seldom that

any sound integument can be preserved from the perinæum to form flaps to enclose the testes after removal of the tumour; but this is of little consequence, as granulation rapidly closes in the wound, and the skin is drawn over the exposed parts by the contraction, which goes on very rapidly, and so effectually that, when perfectly healed, the cicatrix is reduced almost to a line where the raphe formerly existed. The penis, in those cases where no integument could be left for its subsequent covering, is amply protected by cicatrix tissue, which, though it causes a good deal of retraction of the organ, rapidly perfects itself, becoming detached, like older cicatrices elsewhere, and so pliant as to adapt itself readily to the varying conditions of the subjacent tissue.

The subsequent dressing of the wound must be conducted with care and attention, pressure being judiciously applied when the testes are being closed in by the rapidly contracting cicatrix. During the first forty-eight hours it is better not to interfere with the dressings, as up to that time, and even later, they are completely glued to the surface of the wound by the masses of coagulable lymph which are exuded. Suppuration soon commences, and then the dressings can be changed without much trouble to the patient, or fear of causing hæmorrhage. The subsequent dressings consist simply of oiled lint, or even of water dressing; and as the wound closes, it is occasionally necessary to aid the contraction by strips of adhesive plaster. A weak solution of chloride of zinc should be frequently sprinkled over the dressings to destroy the factor of the discharges, which, during the hot weather, with the thermometer at 90° in the shade, decompose very rapidly, and cause the patient and his neighbours much annoyance. The elongated cords rapidly contract, and in the course of three or four weeks, the testes, which were dependent half-way to the knee, are drawn up and enclosed within the cicatrix.

As to the constitutional treatment, for the first few days whilst there is feverish excitement, restricted diet and salines are requisite; but the necessity for ample diet and good nutrients soon occurs, the patient requiring a plentiful supply of food to repair the loss caused by the profuse purulent drain. The periodical paroxysms of fever which accompany the growth of the tumour disappear after the operation, and the relief afforded to the sufferer is great.

In illustration of the preceding remarks I have appended an abstract of fourteen cases of the disease on which I have operated during the last two years.

The tumours have been of all sizes, from the smallest to the largest, though none have attained the excessive magnitude of some of the cases on record in this country.

The result has been satisfactory; of fourteen cases, four only have proved fatal: three from pyæmia, and one from exhaustion, in the case of a very large tumour. The operation caused great depression, and being followed by slight hæmorrhage, death occurred from

asthenia within six hours. It is to be observed that in all these cases the entire genital organs were preserved; and, so far as I am informed, this is always done here, however large the tumour may be.

Cases of Scrotal Tumours operated on in the Medical College Hospital (between July 1859 and September 1861), by J. Fayrer, M.D., First Surgeon and Professor of Surgery of the Bengal Medical College¹:—

1. Nobo Gopaul, a Hindoo milkman, æt. 35, native of Gowaree Zillah, Kishnanugar, was admitted into the Medical College Hospital, with a small-sized scrotal tumour of five years' standing, on the 18th July 1859. The weight of the tumour was 5 lbs. He was operated on on the 8th August 1859, and he left the hospital perfectly cured on the 25th December 1859. There were no untoward symptoms during his stay in the hospital.

2. Bolly Chaund, a Hindoo weaver, æt. 39, native of Kishnanugar, was admitted under the care of the first surgeon of the Medical College Hospital, on the 16th October 1859, with a middle-sized scrotal tumour (the weight of which was 23 lbs.). He was operated on on the 18th October 1859. While the wound was granulating and healing, the patient was, unfortunately, attacked with bronchitis, which carried him off on the thirty-first day after the operation. He died on the 19th November 1859. On post-mortem examination, collections of pus were found in the right and left lungs.

3. Modhaoshoodun, a Hindoo, æt. 36, native of Hoogley, was admitted into the first surgeon's ward, on the 12th October 1859, with a small tuberculated scrotal tumour (accompanied with hypertrophy of the prepuce), weighing about 3 lbs. He was operated on on the 18th October 1859, and left the hospital quite cured on the 28th December 1859.

4. Pixney Madhub, a Hindoo cooly, æt. 22, native of Khidirpore Zillah, the Twenty-four Pergunnas, was admitted into the Medical College Hospital on the 21st October 1859, with a small scrotal tumour which was 7½ lbs. in weight. He was operated on on the 25th October 1859, and discharged cured on the 4th February 1860.

5. Hurrish Chunder, a Hindoo cooly, æt. 23, native of Calcutta, was admitted into the first surgeon's ward of the College Hospital, on the 28th October 1859, with a scrotal tumour of two years' standing. The weight of the tumour was 8 lbs. He was operated on on the 3d November 1859. He died, on the 11th Dec. 1859, from pyæmia. There was some elephantiasis of his left leg and left foot. On post-mortem examination, pus was found in the lungs.

6. Birreshore, a Hindoo labourer, æt. 30, native of Burdwan, was admitted into the College Hospital, on the 27th July 1860, with a scrotal tumour weighing 19 lbs. He was operated on on the 6th Feb. 1860. He died on the 25th March from pyæmia. On post-mortem examination, pus was found in the left lung.

7. Madhub Dey, a robust and plethoric Hindoo, æt. 37, native of Chander-nagur, was admitted into the first surgeon's ward of the College Hospital on the 3d December 1860, with a scrotal tumour of eight years' standing, weighing 35 lbs. He was operated on on the 8th December 1860, and was discharged cured on the 31st of January 1861.

8. Abdool Rohiman, a syce, æt. 32, native of Calcutta, was admitted into the Medical College Hospital on the 20th January 1861, with a small scrotal tumour of eight years' standing, accompanied with hypertrophy of the prepuce. The tumour was 3 lbs. in weight. He was operated on on the 29th January 1861, and discharged cured on the 8th March 1861.

9. Mohipaul, an elderly Hindoo, æt. 45, native of Calcutta, was admitted

¹ Recorded by Baboo Kassie Chunder Dutt, House Surgeon, Medical College Hospital, First Surgeon's Wards, Calcutta.

into the first surgeon's ward of the Medical College Hospital on the 14th September 1860, with a middle-sized tumour weighing $18\frac{1}{2}$ lbs. He was operated on on the 22d September 1860, and left the hospital perfectly cured on the 8th December 1860.

10. Nodiar Chaund, a Hindoo labourer, æt. 36, native of Burdwan, became a patient in the first surgeon's ward of the College Hospital, on the 9th January 1860, with a large sized-scrotal tumour of fifteen years' standing. The weight of the tumour was 66 lbs. Its measurement was about 48 inches in vertical, and 52 inches in transverse, circumference. He was operated on on the 21st January 1860, and died three or four hours after the operation from exhaustion. He had slight hæmorrhage after the operation, from the general surface of the wound. The tumour was very large, descending nearly to the ankles. The patient was not very strong, though otherwise healthy.

11. Hollodhur, a Hindoo, æt. 44, native of Zillah Shikaree, became a patient in the first surgeon's ward of the College Hospital on the 22d February 1861, with a large scrotal tumour of eight years' standing. Its exact weight was not ascertained, but it was over 50 lbs. The circumference of the tumour was 46 inches vertically and 48 inches transversely. He was operated on on the 26th February 1861, and discharged cured on the 12th June 1861. There was no unfavourable symptom during his stay in the hospital. The tumour contained large hydroceles, and descended half-way between the knees and ankles.

12. Falloo, a syce, æt. 36, a native of Calcutta, was admitted into the first surgeon's ward of the Medical College Hospital, on the 26th July 1861, with a scrotal tumour of seven years' standing. The tumour was $14\frac{1}{2}$ lbs. in weight. He was operated on on the 6th August 1861. The patient is still in the hospital, he is nearly cured.

13. Mohamed, mussulman, a man of robust constitution, æt. 32, native of Calcutta, was admitted into the Medical College Hospital, in the first surgeon's ward, on the 26th July 1861, with a scrotal tumour of six years' standing. The weight of the tumour was $12\frac{1}{2}$ lbs. He was operated on on the 6th August 1861. He is still in the hospital, but is nearly cured.

14. Dalla Ram, an elderly Hindoo, æt. 50, native of Shikaree, was admitted into the Medical College Hospital on the 26th August 1861, with a scrotal tumour of five years' standing. The weight of the tumour was $9\frac{3}{4}$ lbs. He was operated on on the 8th October 1861. In addition to the scrotal tumour there was hypertrophy of the prepuce, which was as large as a child's head. The patient is still under treatment, but is doing well in all respects.

Abstract.—Cases, 14.—Cured, 9.—Under treatment, 1.—Deaths (pyæmia, 3; shock, 1), 4.—Average weight of tumours about 19·65 lbs.

Two of the cases marked cured are still in the hospital, but they are so nearly well that they may be returned as cured.

It is to be observed that the recorded weight of these tumours is that of their solid parts, after the blood and fluid had drained away, and does not include the fluid of the hydroceles, which, in some of the tumours, adds so much to both the weight and bulk.

The vermicular movements of the tumours, continuing for some time after their removal, are very remarkable,—the contraction being in some instances so well marked as to cause distinct motion of the entire mass, visible to the students on the most distant benches in the operating theatre, and illustrating remarkably the contractile action of the dartoid structure, long after the connexion with the nervous centres has been separated.

CALCUTTA, October 1861.

ARTICLE V.—*Small-Pox and Vaccination in Campbelton, 1860-61.*

By WILLIAM GIBSON, M.D., and L.R.C.S.E., Campbelton.

ON the 4th of February 1860, a workman and his wife, with a child at the breast and another dead, came in the steamer from Greenock to Campbelton. The object of the parents' visit was to bury the dead child in the ancestral grave. An effort was made to conceal of what ailment it died; but time soon made manifest that which was tried to be kept secret. Three days after coming to town, the infant at the breast "fell sick," and on medical aid being called in, I found this sickness to be the precursor of small-pox. On the 13th March, another workman from Glasgow, having, for about ten days previously, felt languid and unfit for work, came hither to his father's house, intending to recruit his health; but he was not two days in Campbelton until he evinced all the symptoms of small-pox. And, on the 2d April, a vessel came into harbour, and left ashore a seaman ill of the same disease.

In the child and seaman vaccination had been neglected; but the workman had received the full benefit of this operation. These three persons, lodged in distant parts of the town, became centres for the propagation of small-pox, and were the means of introducing this loathsome disease, which, in the course of a few months, spreading from family to family, became general over the town and neighbourhood, and brought death into several households, and misery and suffering into a greater number. My object is not so much to give a history of the disease as it occurred here, as to show, from observation and inquiry made within the district, I. That vaccination has not lost its protective power; II. That it would be very proper to make vaccination compulsory; and, III. That there is a necessity for more stringent sanatory laws, to prevent such a disease as small-pox from spreading.

But, before proceeding to the illustration of these propositions, I shall make a few preliminary remarks.

(1.) *As to the character of the epidemic.*—Of 217 persons who suffered from small-pox, 140 were vaccinated, and 77 were unvaccinated. In by far the greater part of the former, it was in a discreet and modified form; among the latter, excepting in one case which was petechial, and followed with bloody diarrhoea, the disease was, for the most part, confluent; in the other cases it was discreet, and in one or two instances modified. The symptoms accompanying each variety were such as are found ascribed to it in every class-book. The epidemic was by no means a malignant one: the death-rate amongst the unvaccinated was not greater than what is frequently met with, and amongst the vaccinated it was below it. None of the patients died before the eighth day; and the average day of death was the eleventh. The disease never spread rapidly, or prevailed greatly at one time; but,

when introduced, found its way by degrees from family to family. Its progress was apparently little, if at all, influenced by season: the cases occurred about equally during the winter and summer months. The mortality was in like manner uninfluenced by the same cause. The first case of the disease occurred in the beginning of February 1860, and the last, which I know of in town, was in April 1861. The introduction of the disease was gradual, and its disappearance was equally so.

(2.) *As to the people amongst whom it prevailed.*—The disease found its way into a number of respectable families; but, in general, the burden of the epidemic fell on the working and lower classes. As a rule, these in this town are very improvident, and consequently poor: they are too often of indolent and dirty habits, especially the female portion, and apparently entertain no idea of the benefits of fresh air and good nursing. They are frequently congregated in large tenements, the apartments of which are small, low-roofed, and ill-ventilated: failing such, they occupy damp, earthen-floored, unlathed, and unplastered cottages,—circumstances ill-fitted for the proper treatment of such a disease as small-pox.

(3.) *As to the treatment followed.*—The notion that a physician can do very little for a person ill of small-pox, was widely spread amongst these people; but quite an opposite opinion in reference to “old wives” prevailed. These were by far the most popular practitioners in this disease. Their pathology of it was no less absurd than their treatment of it was pernicious. They maintained, with all the stubbornness of a religious prejudice, that for every pustule or pock outside, or on the skin, there was a corresponding one inside, or on the heart; and that if every effort was not made to keep out those on the skin, all would be in on the heart together, which circumstance was certain to ensure a fatal termination. To prevent such a sad result, a mixture of sulphur and whisky administered freely internally, and keeping the patient warm, were considered by them the all-powerful and infallible remedies. This treatment, to a considerable extent, I am sorry to say, was favourably received by people in all circumstances: there might be many who did not believe in keeping the patient warm, but I found few indeed who had not a “hankering” after the sulphur and whisky. Hence, when a person was seized with small-pox, if not under the charge of the ordinary medical practitioner, besides the probability of being kept warm, there was a daily allowance of two, or three, or more free doses of the fiery compound administered. This system was not confined to adults or grown-up people: even infants at the breast were treated after this fashion. How they were made to drain the fiery draught was to me a mystery; but of the fact I had no doubt. It is easier to conceive than describe what must have been the effect on a person in the heat of fever from small-pox, being kept in a small, dirty, close, and hot apartment, and having regular doses of this infernal remedy freely administered. But I

have known the same treatment sanctioned by a surgeon very noted for skill amongst the more Highland portion of the population. I have no doubt that the mortality amongst the unvaccinated was increased by such treatment, and by the other antihygienic conditions previously mentioned; for, with two exceptions, all who died were in such circumstances. Four of them were in one of those cottages, which, with a "but and a ben," contained two families, and in which, on entering to see the poor creatures, it was almost impossible to breathe; three died in another tenement; two in another hut; the rest separately, and with two exceptions, in similar circumstances.

And (4.) *As to the correctness of my statistics.*—I either saw or made personal inquiry about each case, and took notes. A considerable number of those affected had been vaccinated by myself: in many other cases, I relied on the credibility of the parents; and, when in doubt, I satisfied myself by examination. In cases where there was little or no mark of vaccination, if it was attested by the parents that the operation had taken effect, I reckoned the subjects as vaccinated. This appeared to me quite legitimate, because I convinced myself, from what I observed, that vaccination may, like small-pox, be perfectly characteristic, and yet leave little or no mark or cicatrix. There were three cases where vaccination and small-pox existed in the same individuals at the same time; if anything, vaccination had the start; the latter ran its due course, the former was modified: these cases are counted as vaccinated. There were four cases where vaccination had been performed several times without taking effect; in two it was performed thrice, in one, twice, and in the other, once: those on whom it was thrice done were very ill of small-pox; both cases were confluent, and in one of them I did not expect the patient to recover; the disease was also confluent in the individual who had been vaccinated once; in the other it was comparatively slight: these four cases are reckoned unvaccinated. There was one person who had small-pox a second time: it was very evident that she had had it previously, as the first attack had left her very much marked; on the present occasion it was very slight, but characteristic: this case is not reckoned. I may also mention, that I met with three persons vaccinated, who had been exposed on former occasions to small-pox, and who then escaped being affected with the poison, but who, on exposure at present, were taken ill of the disease: all these, however, were slight. I believe, on the whole, my statistics are nearly correct; and I am sure very few, if any cases occurred in town besides those which I have recorded. If any are omitted, they would be in favour of vaccination.

Having made these preliminary observations, I shall now proceed to illustrate, from what I observed, the several propositions stated in the outset.

I. Vaccination has not lost its protective power.—If the primary value of any remedial measure be estimated according as it lessens the mortality of the disease against which it is applied, then the value of vaccination, in lessening the mortality of those who were attacked by small-pox in this town during the late epidemic, was very remarkable. As I have previously stated, there were 217 persons who then had small-pox, 140 of whom were vaccinated, and 77 unvaccinated. Of the 140 who were vaccinated, only one died; but of the 77 who were unvaccinated, 18 died. In the former case, the mortality was so low as 0·714 per cent., or not one in a hundred; but, in the latter, it was so high as 23·376, or nearly every fourth person who was unvaccinated, and who took the disease, died. But we must look at vaccination in a secondary point of view, not merely as a measure for lessening the mortality in this disease, but as a means of rendering it in general mild, and of lessening the sufferings of those who are affected with it. Of the 140 vaccinated persons who took small-pox, in 5 only of these was the disease confluent; but of the 77 unvaccinated, it was confluent in 53: being at the rate of 3·571 per cent. in the former, but in the latter at the rate of 68·831. Or, again, of the 140 who were vaccinated, it was discreet in 135; but of the 77 unvaccinated, it was discreet only in 24: being at the rate of 96·428 per cent. in the former, and in the latter at the rate of only 31·168. But there was even a difference, in regard to the severity of the disease amongst the discreet, of the vaccinated and of the unvaccinated. Of the 135 vaccinated, and in whom it was discreet, there were 114 in whom it was exceedingly slight: they were only sick for a day or two, and had a very small crop of pustules. There were 18 others who had a more numerous crop of pustules, but in whom the disease was still slight; and there were other 3 in whom it was more severe, but not dangerous. Of the 24 unvaccinated persons in whom the disease was discreet, it was slight only in 7 cases: 5 had a more numerous crop of pustules, but by no means a severe attack; and the remaining 12 cases were severe, though not dangerous. But it was in the form of the disease itself that the most important difference betwixt the vaccinated and the unvaccinated existed. Of the 140 vaccinated, and who took small-pox, there were only 2 cases in which the disease was not modified; but of the 77 who were unvaccinated, there were only 3, so far as I could judge, where the disease was modified.

But, not only did I find vaccination a means of lessening the mortality from small-pox, and of making the disease, in general, mild; I also found it a means of rendering exposure to its virus comparatively innocuous. I shall illustrate this, first, by what I witnessed in a number of families which resided in one house. This house consists of three flats and attics, and is subdivided into twenty small apartments. The partitions are wholly of wood, and so are the floorings and roofs; what is flooring to the

family above, is roofing to the one below. There is only one entrance to the building, and a wooden stair up its centre. The partitions and flooring are in such a state of decay, that each family can, if so inclined, have a peep, either sideways or through the flooring, at its neighbours' proceedings. Into these 20 apartments, some of which are not much larger than six feet by seven, 15 families were stowed away, making, in all, fifty-seven individuals, with whom, it may be said, poverty, filth, and immorality struggled for supremacy. Into this great family small-pox entered and found victims in every flat. Thirty-two of the 57 had previously had small-pox, not one of these took it at present; 16 had been vaccinated and had not had small-pox before, 2 only of these took it; and 9 were unvaccinated and had not had small-pox before, all of whom took the disease and three died.

Again, in other 45 families residing throughout the town, consisting of 276 members, 66 had previously had small-pox, 1 of whom had at present a slight attack; 5 had been inoculated, not one of whom was seized; 159 had been vaccinated and had not had small-pox formerly, of these 67 took it, and 93 escaped; and there were 47 unvaccinated, and who had not had the disease before, 46 of whom took it and 12 died; a child which was born when small-pox was in the family was the only one that escaped. Adding these two groups, we have an aggregate of 333 persons, 175 of whom were vaccinated, and had not had small-pox previously; all these were exposed to small-pox virus, and 69 only were affected, on 106 it had no effect. Fifty-five of the 333 were unvaccinated, had not had small-pox before, were similarly exposed, and only one escaped being affected; this was the child formerly mentioned. Showing, that those vaccinated and exposed were affected only at the rate of 39·428; whereas those unvaccinated and exposed were affected at the rate of 98·181 per cent.

An approximate comparison may be made of the protective power of vaccination, in reference to the population of the burgh. The number of inhabitants who had had small-pox previously would be about 1878; of those vaccinated about 4057, and of those unvaccinated about 107. Suppose that all were, in general, similarly exposed; of the 4057 vaccinated, 140 only took small-pox; but of the 107 unvaccinated, 77 were affected. Or, suppose that every person in town had neglected vaccination, 4348 would have taken small-pox, 1016 would have died; whereas, supposing every person in town to have been vaccinated, 208 only would have taken the disease, and 1·414 would have died.

But, neither did I find the protective power of vaccination confined to a few years subsequent to the operation. Had it been so, it would follow, that as persons receded from the period when vaccinated, they would, on exposure to small-pox virus, become more liable to be affected by it. But this was not the case; for of 175 persons belonging to the families formerly mentioned, who were

vaccinated and exposed to small-pox virus, 120 were under sixteen years of age, or not beyond the period when revaccination is maintained to be necessary, and of these 50 were affected by it and 70 were not; or they contracted the disease at the rate of 41·666, and escaped at the rate of 58·333 per cent.; but of 55 vaccinated, similarly exposed, and from 16 to 50 years of age, or above the period when revaccination is held to be necessary, only 19 were affected and 36 escaped; being affected at the rate of 34·909, and escaping at the rate of 65·454 per cent. Showing, that those who were farther removed from the period of vaccination were affected by small-pox virus in a lesser ratio than those in whom the operation had been performed more recently; being contrary to what might be expected if vaccination lost its protective power every 14 years.

The ages of all those vaccinated, and who took small-pox, also indicate that vaccination does not lose its protective power fourteen or fifteen years after the operation; for, of the 140 vaccinated persons who took small-pox, 91 were under sixteen years of age, and 49 only were above it: this, I am sure, is a much smaller number than the other, in proportion to the number of persons exposed above that age.

Another thing I am also sure of is, that the severity of the disease did not increase in a given ratio from the period of vaccination. The vaccinated person who died was only 11 years of age. Three of those vaccinated, and in whom the disease was confluent, were of the same age,—the two other confluent cases were under 30. Hence, I have shown that the mortality from small-pox was much greater amongst the unvaccinated than it was amongst the vaccinated; that the disease, apart altogether from its mortality, was in a much milder form in the one case than in the other; that those vaccinated and exposed to small-pox virus were much less affected by it than the unvaccinated; and that this immunity was not confined to a short period subsequent to the operation. It may, therefore, be justly inferred that vaccination has not lost its protective power.

II. It would be very proper to make vaccination compulsory.—Government frequently interferes on occasions of less importance. Were a mother or a nurse to have a little poisonous matter beside her for the destruction of vermin, and were the child committed to her care to get it through her negligence in not putting it carefully out of the way, to partake of it and die; or were the child under her care to die unexpectedly, the executive would think it necessary to cause strict examination to be made into all the circumstances connected with its death, and a post-mortem examination of its body to be made, lest death might have occurred by foul play. And all this would take place, even though the *prima facie* view of the case in no way indicated foul play in the matter. Here, then, is government freely spending money and making exertions for the protection of life, even though, as we have hinted, appear-

ances indicated that death was simply accidental. Yet, how different is its conduct in reference to children dying from the effects of contagious poison, even though this is as much, if not more, due to negligence of parents and guardians in the one case as in the other. In this town, in the course of one year, we have seventeen persons, not to speak of the numbers who may have died throughout the country during the same period, dying from the effects of small-pox poison, which it was in the power of their parents and guardians to protect them against, and whose duty it was to do so. Nevertheless, government in this case looks on with downright indifference, and seems as unconcerned about this fearful mortality, due to the sheer neglect of those whose moral duty it was to guard against it, as if lives lost in this way were of no moment whatever. Surely, if it is the duty of a government to interfere in such cases as the former, it cannot but be criminal to neglect it in the latter.

But not only is there a dereliction of duty on the part of government in regard to vaccination in Scotland, its conduct as to the United Kingdom is partial. It has already made vaccination compulsory in England, and surely, if it is necessary to make vaccination compulsory for the protection of life there, statistics prove too truly that it is as necessary for Scotland. I am aware that the legislative measures in England regarding vaccination have not wrought so well as intended; but it is merely in the working of the Act where jarring has arisen, no fault having been found with the end which the Act contemplates. But even though the working of the Act is faulty, the end which it has in view seems to be understood and appreciated; because if it were an oppressive and tyrannical Act, and were the good which it accomplishes not sufficient to outweigh the annoyance which its operation occasions, the English people would be heard complaining against it far more than they do. If it is a grievance, it is one which seldom finds its way into the great organs of public opinion. Besides, in legislating for Scotland, government might be guided by the experience of the working of the English Act, and it could avoid in Scotland that which has been the occasion of jarring in England.

But government has already interfered indirectly in Scotland: the Board of Supervision for the Poor has acted in the matter with what energy it could. On several occasions, it has issued instructions to parochial boards, and to parochial medical officers, regarding vaccination. In September 21, 1848, when the Board issued rules as to medical relief for the poor, this was part of Rule xii. "And he (the medical officer) shall at all times be furnished with vaccine virus, and vaccinate, without demanding a fee and other remuneration than his salary from the parish, at stated times and places to be named by the parochial board and approved by the Board of Supervision, all persons who may come or be brought to him for that purpose." On April 10, 1856, attention was again called to this part of Rule xii., by a circular sent to parochial

boards by the Board of Supervision. Another circular by the same Board was issued May 1, 1857, in which it was ordered, "that opportunities should be afforded at stated places and times (at the least once a-quarter), for the gratuitous vaccination by the medical officer of all persons, of whatever age or condition, who may come or be brought to him for that purpose, in accordance with the arrangements made by the parochial board and approved by the Board of Supervision; that means should be taken to inform the population of the parish of the opportunity for vaccination by notices upon the church-doors, or by intimation from the pulpit by the ministers of all denominations in the parish, or otherwise, as the parochial board may think best, at least a week before each of the stated times; that the medical officer should attend punctually at the stated times and places for the purpose of vaccinating those who present themselves, and carry with him on each occasion a sufficient quantity of vaccine virus. If the medical officer should fail to appear at the stated time and place, or should upon any occasion bring with him insufficient quantity of vaccine virus, it is his duty within a week thereafter to visit the houses of all persons disappointed by his neglect, and to vaccinate them at their homes." With the exception of giving intimation from the pulpits of all denominations, these instructions of the Board of Supervision have been regularly carried out in this parish. However, this is beginning at the wrong end of the matter; for, instead of making it compulsory on the part of parents or guardians, with whom the neglect lies, to have the children under their care vaccinated by a certain period of life, it has only made it compulsory on the part of the parochial medical officer to attend at certain places quarterly, and vaccinate those who are pleased to wait on him. In this way, a vast amount of extra labour has been thrown on the parochial medical officer of this parish, and I have no doubt of other parishes also, without a corresponding increase of his salary, or benefit to the community. Nay, instead of increasing his income, it has been a means of diminishing it; because people here have largely availed themselves of gratuitous vaccination, and, if this be taken as an example, it would appear that gratuitous vaccination is much more taken advantage of in Scotland by persons who are able to pay than has been stated by Dr Alexander Wood. The fee which would otherwise be got for vaccination from those who are able to pay, is lost by the instructions of the Board of Supervision. For example, during the year 1860, I vaccinated at the stated places, according to this board's instructions, 141 persons, and of these ten only were paupers; showing that a parochial medical officer is bound both to give time and labour for nothing to those who are not in want of it. But even this would be a small matter were the end accomplished which the Board of Supervision has in view, namely, that there should be no person unvaccinated; nevertheless, the end is far from being gained; for, in spite of the vaccination of these 141 individuals,

there remained in this parish at least 77 unvaccinated, and who took small-pox. It is, therefore, evident that this mode of dealing with the matter does not at all reach the class of persons whose apathy and indifference to the interests of their offspring in regard to vaccination may be said to be criminal.

It has been argued that there is no necessity for making vaccination compulsory, as *stimulation* would be quite sufficient. This method was fairly tried in this town and has failed completely. In addition to the simple notice, stating that all persons who came or were brought would be vaccinated free of charge, I caused to be inserted in the printed notices such expressions as, "small-pox having appeared in town," "small-pox being prevalent," &c.; I even sent the sub-inspector of poor from door to door, to persuade those whom I thought would neglect this valuable operation; yet, in spite of these stimulating efforts, and though there was a sort of panic in the town about small-pox, there still remained numbers of the lowest class of people who neglected to protect their offspring against the disease by this very simple operation. Indeed, in my visitations, I often myself urged those whose children I found unvaccinated, to have it done without delay: a faithful promise of attendance would be given, but when the day appointed came they were absent, not that they did not believe in the virtue of vaccination, or that they were prejudiced against it, but because they were so apathetic and indifferent, so little impressed with the obligations which they owe to those placed under their care, that some trivial matter which came in the way gave occasion for an excuse for non-attendance. I have often asked these poor creatures, when I found them suffering from the consequences of their neglect, why it was they did not take advantage of the opportunity to get their children vaccinated? The almost invariable answer was, that they were always thinking about it. It was not that they did not know the value of it, for I do not think I ever met with one who did not know that; neither was it the want of natural affection for their offspring, for no class of persons will bewail the loss of it more than they; but it was this continual thinking of getting it done and never performing, this criminal apathy and indifference, which, I am persuaded, no power but that of government is able to overcome. Were vaccination made compulsory, it would not only be a means of frequently lessening human suffering, but a great number of lives would be saved. If, in a community like this, numbering only 6042 persons, there were found so many unvaccinated in spite of every effort to the contrary on the appearance of small-pox as to admit of 17 deaths amongst that class of persons, what must the number be in the larger towns of Scotland, or throughout the country. It is no wonder that the impression prevails that small-pox is regaining its former virulence, indeed it is doubtful if it ever lost it. But as the real cause of its virulence in past times was due to want of vaccination, so there can be as little doubt, if inquiry

were made in those parts of Scotland where small-pox has recently prevailed and proved fatal, this would be found due, not to small-pox being more than usually virulent, nor to the loss of the protective power of vaccination, but to the neglect of this useful operation.

Again, were vaccination made compulsory, the panic which generally attends an epidemic of this disease would be prevented, or at least greatly abated: this itself would be a great boon to a community. And it is evident that such abatement would occur, because when a disease is lessened in its severity, and rendered so mild as that few if any die from it, a panic fails to arise; for where there are no deaths from a disease, there is no panic.

Several objections have been urged against making vaccination compulsory. It has been said that it would be contrary to the genius of the nation to make it so. This appears to me a misconception; it is wrong in theory, and would be found so in practice. The same objection might be urged with equal force against every hygienic law in operation in the country. Surely a measure which would be for the benefit of the nation, which would only become law through the nation's delegates, which was not arbitrary or class legislation, or would not interfere with the conscience, but which would be equally binding on those who framed the law, as on others, could never be contrary to the genius of the nation; it would only be in keeping with the genius of all our legislation, and with the glorious liberty of the British constitution.

It is thought that to make vaccination compulsory would be impracticable; that those who now neglect it without law would, on its becoming law, be constantly exposing themselves to the penalty; and the benefit which the law would thus confer would be overbalanced by the evil occasioned by its operation. This is very doubtful, and we are at least entitled to know it from the experience of the working of the act itself. I know I have often asked those who had neglected vaccination if they would object being compelled by government to get it done. In general, they answered that they would not; some of them even added, that they thought that it would be a good thing if they were compelled. Moreover, this is only in accordance with human nature. We all know and frequently feel the advantage of being compelled at times, by legislative enactment, to perform moral and political duties, in which we should otherwise be remiss.

Again, it is objected on moral grounds to make vaccination compulsory; it is said that it is wrong to make that compulsory which the obligations we owe by nature to our offspring render a duty. It certainly would indicate a better state of society if legislation were not required on such subjects; but, as matters stand, we see no help for it otherwise. It is a moral and political duty for parents to provide for their offspring; yet, it is anticipated that some will neglect even this duty, and a law is framed by the state to meet

such cases. In the same way, I would have the state to save lives by compelling vaccination. Most people will voluntarily fulfil this duty to their offspring; yet there will be some who would be so careless as to neglect it, and provision should be made against such cases.

It therefore appears to me that it would be proper to make vaccination compulsory; because government interferes to protect life under less urgent circumstances; because it has already made vaccination compulsory in other portions of the United Kingdom; because it has already interfered indirectly in Scotland, though the wrong end has been begun at; because stimulation is insufficient; because many lives would be saved, pain allayed, and the amount of human suffering lessened, were such a measure in operation; and because the objections to it are of no moment, nor of such a nature as to show that such a measure would be unjust.

And, III. There is a necessity for more stringent sanitary laws to prevent such a disease as small-pox from spreading.

I shall illustrate this proposition by relating the introduction of small-pox into this town, on the occasion of the outbreak of the late epidemic. On February 4, 1860, a child was brought hither from Greenock. On the 6th, it was taken ill of small-pox; it had not been vaccinated, and it had a plentiful crop of pustules. It was lodged with its parents in the house of its mother's relations. This was in a low and dirty locality, and their house was in uniformity. The child recovered in about three weeks, and was then removed to Glasgow; but the house in which it had been lodged remained uncleansed, being an inheritance of contagion to the burgh. This was the first case of small-pox which had been in the town for more than twelve months. The cases which occurred then were also imported; but at that time the disease did not spread, and there had been no epidemic of it for a number of years before.

On March 28, A., living in a different street from that in which the child had lodged, but who had been in the habit of frequenting the house where it had been, was, after being engaged washing clothes for two days, taken ill of small-pox, and died of it on the 14th April. This person had four children—two vaccinated, and two unvaccinated—all of whom took it. Those vaccinated were not confined to the house, but were allowed to run about the streets whilst the disease was on them. They were the means of communicating it to another family near by, most of the members of which were also unvaccinated. This occurred on April 26. Another of A.'s children—one of those unvaccinated—being only a few months old, was removed to a friend's house, which was situated in another part of the town. When there, it was taken ill, and communicated the disease to the family with which it was. This was on the 12th April. On the 19th, B., living in a different street from any of those mentioned, but who had intercourse with A., took small-pox; and

on the 21st, A.'s sister's child, residing in a still different part of the town, was taken ill of it. In this way did misery, suffering, and death spread around the abode where the little child had been.

Again, on the 13th March, C., from Glasgow, came hither to his father's house, which was situated in a village suburb of the town. He had scarcely reached home before the symptoms of small-pox were manifest in him. On April 6th, C.'s father took it; and on the 3d, D., a fellow-workman of the father, who had had communication with him. All these had been vaccinated, and in them the disease was slight, and it was thought that it might cease to spread there; but, on the 20th, a sister of C. was taken ill, and a child of D. died on May 4th. And on the 24th, E., living in another suburb, had an unvaccinated daughter attacked by the disease (this was one of those who had been vaccinated thrice and failed). She had visited the family of D. when the disease was in the house, and contracted it.

And on April 2d, F., a seaman belonging to a vessel newly arrived in the harbour, was put ashore ill of small-pox. He was removed to a wooden erection a short distance out of town. F. was unvaccinated, and died on the eleventh day of the disease. His nurse, who belonged to the town, had a family, two of which were unvaccinated, and she still had intercourse with them. They lived in another quarter of the town. On the 21st April, one of them was taken ill. On the 1st May, a man living in the same tenement was seized; and, on the 4th, the other child of the nurse.

These three cases, the child, workman, and seaman, imported to Campbelton became germinal centres, so to speak, from which small-pox propagated, and had its first beginnings; being communicated by them to those who, by duty, pity, or accident, held intercourse with them, again to be spread from these to others in like manner, until it became general over the town and neighbourhood.

This mode of introduction of small-pox into Campbelton may be regarded as an illustration of the way in which such a disease is generally introduced into towns: it is mostly imported from some district where it prevails, by individuals conveying it hither in their own persons during the period of incubation; soon the disease develops itself in them, and as intercourse with the inhabitants of the town whither they have come is maintained, a gradual diffusion of the virus is the result. Several of the inhabitants contract the disease from them, and these in their turn communicate it to others, and so on it spreads. Now, though epidemic disease may be regarded as a dispensation of Providence—and it may be a duty so to view it—yet its mode of diffusion is such, that the same Being who sees meet to afflict us with it, has at the same time put in our power the means, if we would only employ them, by which, at its commencement, its diffusion might be easily overcome. I think it could not be denied, that when

introduced in the persons of the child, workman, and seaman, that had there been more stringent sanatory laws in force, had there been a responsible local authority, with a medical officer of health as its right arm, and a small hospital into which such cases as the above could have been removed; and had the persons into whose houses those ill of this disease were lodged been compelled, as well as the medical attendant, to give information to the local authority of such being in their houses, or under their care; and had the local authority, on this information, acted with promptitude, and removed these cases to the hospital, or compelled them to be completely isolated, and the houses which they inhabited to be thoroughly cleansed, there is every probability that small-pox, even though the law regarding vaccination remained unchanged, would have been confined to the persons of those who brought it hither. Until an act granting some such powers as those we have indicated be framed and brought into operation, diseases such as small-pox must and will at times prevail epidemically in most towns throughout the kingdom. The beneficial tendency of such a measure as this would be very great; pauperism and disease would be decreased, and consequently our public burdens diminished, and many lives would be saved to the nation.

I know that it is objected that such measures are harsh and tyrannical; they may be, but if so, their practical application must be confined to a few persons, and certainly a community must be very susceptible or jealous of tyranny, seeing that it allows disease and death to have free course amongst it, and suffers the increase of its public burdens, rather than that it may appear as harshness or tyranny, that two or three individuals who are to be the sole means of all the ill should be compelled to remove to an hospital, or to be completely separate for a very short period from the mass of their fellowtownsfolk.

The suppression of contagious disease in any form is a public good; and as in many instances the means by which this could be easily accomplished are attainable, and as their application would not be injurious to the persons or properties of those for whom it might be necessary, it appears to me a duty to endeavour to bring such into operation.

ARTICLE VI.—*Case of Strangulated Hernia, accompanied with Chronic Abscess in the Neighbourhood of Poupart's Ligament.* By JAMES ALEXANDER, Wooller, L.R.C.P.E., and L.R.C.S.E.

ON 2d of October last, I was requested to visit H. Y., who had long laboured under a reducible hernia, for which she had never worn a truss. For the last few days, however, the tumour had resisted all her attempts at reduction, and lately she had vomited

all the food she had taken. This, with obstruction of the bowels, was the only symptom of strangulation present; there was no pain, no restlessness, no abdominal tenderness; there was even some appetite, though after a time the food was rejected; and the pulse was positively undisturbed. On examining the tumour, there was some difficulty in determining whether the hernia was inguinal or crural: the prominent part occupied the position of a femoral hernia, but there was a hard swelling, which followed almost exactly the course of the inguinal canal, which threw a little doubt on the diagnosis. The almost total absence of distress rendered the woman less willing to consent, and me, perhaps, less urgent, in pressing an operation, than I should have been; but after the lapse of nearly three days, during which the taxis and ordinary measures in aid of it (including the tobacco enema), were perseveringly tried, the operation was had recourse to.

The first incision was made parallel to Poupart's ligament, over the most prominent part of the hernia, the steps of the operation presenting nothing unusual, except that there was certainly more difficulty in distinguishing the sac than I have experienced on former occasions, although this, which is a point not much adverted to in books, I have generally found the most puzzling part of the operation. It was not till the sac was freely laid open that the relations of the parts could be sufficiently ascertained to show conclusively that the intestine passed through the crural aperture; and even after the ordinary seat of stricture at Gimbernat's ligament was divided, the greatest difficulty was experienced in returning the protruded portion of gut, owing to a firm unyielding swelling, which appeared to occupy the whole space under the crural arch, and compelled one part of the intestine to describe a tortuous course downwards and outwards into the abdomen, a projecting process of it seeming to separate the part of the intestine that lay in contact with Gimbernat's ligament from that which occupied a more outward position. This part of the swelling was very cautiously notched with the probe-pointed bistoury, and after a good deal of manipulation, the hernia was reduced, and a careful examination with the finger showed the swelling to be no distinct tumour, but the internal projection of that hardness and fulness along the course of Poupart's ligament which had embarrassed the diagnosis previous to the operation. An attack of peritonitis occurred four days after the operation, but was subdued, and after its subsidence the bowels moved freely and regularly; but the swelling above mentioned continued the seat of extreme pain, and ultimately suppurated, discharging a large quantity of pus through the wound, which opened to give it an exit. Another chronic abscess, similar in character, and pursuing a like course, formed close beside the umbilicus, but ultimately the woman did well.

I have thought it worth while to record this case, first, on account of the complication I have endeavoured to describe—because every

deviation from the ordinary progress of things, in a disease so common and so important as hernia, appears to me of interest; and next, because it gives me an opportunity of stating my strong conviction of the propriety of a very early operation, wherever there exists incarceration of the intestine with constipation. In this case the operation was deferred greatly too long. There is no reason to believe that the formation of matter under the abdominal aponeurosis in either of the situations where it took place would have been influenced by an early operation. But the attack of peritonitis, I do believe, would have been prevented, had I in this case followed the practice I have uniformly pursued in others, of operating immediately after the taxis, and such auxiliary means as seem suited to the individual case, have been tried and failed.

ARTICLE VII.—*Case of Poisoning by Sulphuric Acid.* By D. RUTHERFORD HALDANE, M.D., Pathologist and Special Assistant Physician to the Royal Infirmary of Edinburgh.

J. G., forty years of age, was brought by the police to the Royal Infirmary, about eight o'clock in the evening of the 3d January. The officers stated that the man had poisoned himself, but that they knew nothing more regarding him.

The patient was quite conscious, and in great pain; he admitted that he had taken poison, but would give no information, either as to the substance he had swallowed, or as to his motives in taking it. Under these circumstances, and as the symptoms were manifestly those of irritant poisoning, Mr Ketchen, the physician's assistant in attendance, prescribed an emetic of sulphate of zinc, to be followed by draughts of warm water. The patient took the medicine into his mouth, but it soon ran out again; he did not appear to swallow any of it. Soon after, it was noticed that though the lips presented no marks of erosion, the lining membrane of the mouth had a whitish, bleached appearance; it was accordingly suspected that an acid, and probably that sulphuric acid, had been the substance swallowed. Magnesia suspended in milk was accordingly given, and was pretty readily taken by the patient; white of egg was also administered. About eleven o'clock an enema was thrown up, and brought away some fecal matter. The patient passed no water while in the hospital.

Five hours after admission the patient died; he sank gradually, and was conscious to the last. During the period he was under observation, he seemed at times to be free from pain, at others he appeared to suffer much, drawing up his legs and moaning loudly.¹

¹ For these particulars I am indebted to Mr Ketchen, who was temporarily acting as Dr Gairdner's house-physician.

After his death, a few additional particulars were obtained from the friends of the deceased. It appeared that, though able enough to manage his affairs, he had always been of rather weak intellect, and had been at one time of decidedly intemperate habits. He had been a dairyman, and had had cattle of his own, but two or three years before he had met with a series of losses, and had been reduced to work as a day-labourer with a cowfeeder. For some time back he had appeared much depressed in spirits, and on leaving his house on the morning of the day on which he took the poison, he told his wife that she would probably not see him again. He swallowed the poison, as nearly as could be made out, about four o'clock in the afternoon; and he told a girl who saw him in the Queen's Park, that he had taken "vitriol," from a bottle which was used in fumigating the cow-houses. The girl gave information to the police, and the poor wretch was brought at once to the hospital.

An ineffectual attempt was made to procure what remained of the fluid he had swallowed, or even to obtain the bottle which had contained it.

The body was examined sixty hours after death. The weather was mild for the season, but there were not the slightest traces of putrefaction.

The mucous membrane of the lips had a dull whitish appearance, and the epithelium was readily peeled off; there were some raw excoriated points at the angles of the mouth, but there was no trace of black discoloration of the lips or of any part of the face.

The lining membrane of the mouth had a whitish appearance, and the epithelium was easily removed.

When the abdomen was laid open, its contents presented an unusual appearance. The great omentum, which contained a good deal of fat, was of a dull greyish colour; the blood in its vessels was coagulated into firm black masses. Two or three ounces of a brownish fluid were found in the cavity of the peritoneum; this fluid irritated the skin, and imparted to it a sensation of dryness; it was collected and put aside for examination. The small intestines, in the upper part of the abdomen, had a peculiar dull appearance, and were of a brownish-grey colour, while their blood-vessels were visible as dark brown, or black streaks. The whole of the jejunum presented this appearance, and over the remainder of the intestines similar patches were here and there observed. The jejunum felt firm, suggesting the impression either that it was filled with pulsatious matter, or that its coats were much thickened. The stomach had externally the same dull appearance as the jejunum; the splenic half of the organ was of a dark greenish-black colour. No part of the intestines was contracted.

The whole of the alimentary canal from the mouth downwards was removed, and the following appearances were met with.

The tongue had a dull sodden appearance, but its mucous membrane was scarcely more readily removed than natural. The

lining membrane of the soft palate and pharynx came off in thin, soft, whitish shreds, exposing a raw, congested surface. The greater part of the inner surface of the œsophagus had a peculiar mottled appearance, its lining membrane being of an opaque white colour, while the dark subjacent tissue was at some places exposed. The lower two or three inches of the œsophagus had a dark-brown treacly appearance, and the tissues were softened.

The stomach was moderately distended; it contained nearly a pint of a greyish-white pultaceous matter, which had a sour smell, and a well-marked acid reaction, and consisted chiefly of partially digested aliment. The coats of the viscus were quite entire. On laying open the stomach, and clearing it of its contents, the coats of the greater part of the splenic half of the organ were found much swollen, projecting considerably above their natural level, and being of a black colour; on cutting into this part, the appearances were found to be due to the presence of carbonized blood in the sub-mucous tissue. There were two or three similar prominent black patches in the duodenal half of the stomach; but, in general, the coats of this part of the organ were not thickened, but were of a grey colour, and presented a remarkable arborescent or reticulated appearance, due to the vessels being filled with black coagulated blood. The pyloric orifice was not contracted; but its mucous membrane was a little thickened, and of a light greyish brown colour.

The folds of the duodenum were prominent and thickened, and appeared as if coated with a layer of mortar; a quantity of softened matter could be scraped off, leaving a dark-coloured surface exposed. Throughout the greater part of the jejunum the coats of the intestine were much thickened, the folds were prominent, and the whole inner surface of the gut had a very characteristic leathery appearance, and was of a yellowish-grey colour. A layer of a softish matter could be scraped off, bringing into view a raw dark-coloured surface. When a little of the matter so removed was examined microscopically, it was found to consist chiefly of epithelium cells, and fatty and granular matter; but portions of the villi of the mucous membrane were also recognised.

The coats of the ilium were generally healthy, though there were occasional patches where the lining membrane had a dull whitish appearance, due apparently to coagulation of part of the secretions of the gut. The large intestine was natural.

Almost all the vessels of the mesentery were filled with coagulated black blood. That portion of the posterior surface of the liver which overlapped the stomach was of a dirty brownish colour, and had an opaque appearance, as if it had been boiled. Part of its anterior surface presented a similar appearance. In the latter case, the condition was superficial; but in the first-mentioned situation it extended for more than a quarter of an inch into the substance of the organ, and the blood contained in the vessels of this part was coagulated and blackened. On microscopic examination of the

altered hepatic tissue, the glandular cells were found, for the most part, broken up and replaced by granular matter; but the nuclei were distinct, and masses of biliary colouring matter were seen. The portion of the diaphragm surrounding the cardiac extremity of the stomach was dark coloured, and somewhat softened.

The respiratory organs were examined. Both on the anterior and posterior aspects of the epiglottis little whitish shreds were found, which were easily scraped off, exposing a raw congested surface. There was a similar appearance of the lining membrane of the larynx as far as the superior vocal chords. Around and below the vocal chords there was a quantity of a brownish-white coagulated matter, but the mucous membrane was uninjured. The inner surface of the whole of the trachea, and of the upper part of the bronchi, was much congested, but the epithelium did not peel off. The heart and lungs were natural. The greater part of the aorta was empty; but a little above its division, and in both the common iliac arteries, was some loosely coagulated blood, which had a dark tarry appearance.

A tape-worm, nearly 20 feet long, was found in the small intestine. It was much softened, and broken into numerous pieces. After some search the head was found. It was lying very near the commencement of the jejunum, and attached to it was a portion of the worm about a quarter of an inch long.

The fluid found in the peritoneum was examined. It had a well-marked acid reaction. It was filtered; and on the addition of a few drops of dilute nitric acid, followed by a solution of nitrate of baryta, a copious white precipitate was thrown down. This precipitate was insoluble in concentrated nitric or hydrochloric acid. The precipitate was collected, washed, and dried. It was then mixed with charcoal, and exposed in a platina capsule to a full red heat. On the addition of dilute muriatic acid, sulphuretted hydrogen was given off, recognisable by the smell, and by blackening filtering paper dipped in a solution of acetate of lead.

Under these circumstances, it was considered unnecessary to make a chemical examination of the contents of the stomach.

The above case presented the symptoms and pathological appearance usually found after poisoning by sulphuric acid in so marked a manner, that but a very few additional observations seem necessary. Had there been the slightest reason to believe that the poison had been feloniously administered, it would of course have been necessary to make a more complete chemical analysis; in particular, it would have been essential to have examined the contents of the stomach. But as, in this instance, the patient stated that he had swallowed "vitriol," as the symptoms were those of irritant poisoning, as the post-mortem examination furnished proofs of the action of a corrosive, and as the appearances exactly corresponded with what is produced by sulphuric acid, it seemed sufficient to

identify the poison in the readiest manner. For this purpose the fluid found in the peritoneum was selected, as, after filtration, it was sufficiently pure to admit of the application of the ordinary tests. The occurrence of a precipitate on the addition of a salt of barium, its insolubility in strong acids, and the evolution of sulphuretted hydrogen, after it had been reduced to a sulphuret, sufficiently indicated the presence of sulphuric acid.

It is unfortunate that the remainder of the liquid swallowed could not be obtained, as it consequently became impossible to ascertain the strength of the acid taken. It is not, however, probable that it was very concentrated, otherwise there would most likely have been blackening of the lips and disorganization of the mucous membrane of the mouth. Indeed, in some cases where a strong acid has been taken, the morbid appearances have been found almost confined to the mouth, fauces, and pharynx, little or none of the corrosive fluid having passed into the oesophagus. In the present case, however, the marks of injury were slight until within two or three inches of the stomach. Possibly there had been some spasm of the cardiac orifice of the organ, which interfered with the free entrance of the poison, and caused it to remain for some time in contact with the lining membrane of the gullet. The splenic half of the stomach suffered most; and it seems probable that, but for the partial protection afforded by the presence of food, even greater disorganization of the walls would have occurred. The man was at least four hours under the influence of the poison before antidotes were administered, and, had the stomach originally been empty, it is probable that perforation would have taken place. Vomiting does not seem to have occurred, although usually noticed after poisoning by the strong acids.

This case differs from most similar ones, in the fact of the pylorus not having been contracted. In general the pylorus is tightly constricted, and accordingly, it often happens that the poison does not pass in any quantity into the intestine. Here, however, there seems to have been no such obstacle; the whole of the lining membrane of the jejunum had been acted on, and had assumed a tanned or leathery appearance. It is also singular how uniform the appearances were in the affected portion, the morbid condition ceasing abruptly, and not shading off gradually into the healthy structure,—the few white patches which occurred lower down being merely due to the coagulation of the intestinal mucus by a small quantity of the acid fluid. It would seem that the muscular coat of the intestine had not been completely paralyzed, but that the peristaltic action had gone on long enough to carry down the corrosive fluid through seven or eight feet.

A singular circumstance observed in this case, and which has been noticed in others, was the escape of a portion of the acid through the walls of the stomach and alimentary canal. With reference to this point, the condition of the liver seems particularly

worthy of note. On its posterior surface, which lay upon the stomach, and would therefore be most directly acted upon, real disorganization of the hepatic tissue had taken place. This portion presented the appearance of having been boiled; and on examination, the liver-cells were found broken down, while the more resistant nuclei had escaped. We certainly should not expect, *à priori*, that an acid should escape through an entire membrane in such strength as to produce partial disorganization of an organ on the other side.

The fact of the presence of a taenia is curious, particularly as this entozoon is rather rare in Edinburgh. The condition in which the worm was found is sufficient proof (had any proof been wanting) that moderately strong sulphuric acid, though a dangerous poison, is a powerful anthelmintic.

The only other point to which I shall allude is the condition of the blood. As already mentioned, the blood in many of the vessels was coagulated, and converted into blackened cylinders. It would be interesting to know whether this change takes place to any extent during life, or whether it is entirely a post-mortem phenomenon. In the present case the circumstances were the most favourable possible for its occurrence. A large quantity of acid fluid was present in the peritoneum; and as a considerable interval elapsed between the patient's death and the examination of the body, there was abundance of time for chemical changes to be effected. If coagulation takes place to any extent during life, it is possible that the establishment of this condition may tend to accelerate the fatal result.



ARTICLE VIII.—*Contributions to the Knowledge of Osteomalacia.*

By Dr C. C. T. LITZMANN, Ordinary Public Professor of Medicine and Midwifery, and Director of the Lying-in Institution at the University of Kiel. Translated from the German: by J. MATTHEWS DUNCAN, M.D., Lecturer on Midwifery.

(Continued from page 655.)

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¹ The translator has, for reasons which he need not enter upon, preferred literal copying of this bibliographical chapter to any attempt at translation.—J. M. D.

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Part Second.

REVIEWS.

The Principles and Practice of Obstetrics. By GUNNING S. BEDFORD, A.M., M.D., Professor of Obstetrics, the Diseases of Women and Children, and Clinical Obstetrics, in the University of New York, etc. New York: S. S. & M. Wood: 1861.

THE work before us consists of forty-six chapters, called lectures, and includes most of the subjects generally discussed in British books on midwifery. Obstetrics, the name adopted by Dr Bedford, is a vague term, sometimes made to include, along with midwifery, the diseases peculiar to women, but more properly, as its origin indicates, confined to the former. We cannot, however, think that any ingenious application of the word accounts for the curious omissions from among the subjects treated of. In German books on midwifery, it is not unusual to find all post-partum diseases omitted entirely. But Dr Bedford introduces into his work puerperal fever, and omits weed; he describes puerperal mania, and omits phlegmasia dolens. The diseases of the mamma and of the nipple, as belonging to a distinct region of the body, he may perhaps justify himself in omitting, but he ought not to have failed to complete his literary production by neglecting to add a very few essential portions, without which even what he gives is imperfect.

We could mention many minor omissions in the separate chapters, and various errors in referring to authorities or naming original observers, but we refrain. The book is, as a whole, so good, and so far excels the generality of American text-books of midwifery, that we wish our readers to be impressed only with a sense of its general soundness, readableness, and worth. In these days, when noise and petty ingenuity are often passed off as superior to soberness and wisdom, we have great reason to value soundness; when a parade of quotations and authorities, and a confusion of old and new, of true and false are so often substituted for real intelligence, and, combined with a deficiency of the latter, render so many text-books utterly bad and unreadable, and useful only for the crammer, then we value the high quality of readableness; when a flippant audacity and love for mere novelty pervert the judgment of so many writers, made giddy by their own enthusiasm, and the applause they surely win, then, above all qualities, we value worth. We can give Dr Bedford's volume no higher praise than to say that it is, as a whole, remarkable among its contemporaries for soundness in scientific view, readableness as a literary composition, and worth as a guide of practice. Withal, it has many imperfections.

Dr Bedford estimates very highly the knowledge of the mechanism of parturition, and says that it is as valuable to the obstetrician as the compass is to the navigator. We do not feel inclined to admit the justice of this comparison, as little to dispute it at length, and dismiss it with the single remark, that while labours have a natural tendency to advance easily and as is best, and while in many and various difficulties nothing is required from the steersman but a wise expectation, and while the immense majority of labours come to a happy termination, ships have as much chance of being driven into danger as to a happy haven, and, when once they strike the rocks, have no inherent likelihood of gaining any end but destruction. This comparison with the mariner's compass indicates a tendency of the author with which we cannot fully agree. It consists in attaching too much precision and certainty to our knowledge or supposed knowledge of the mechanism of labour, and, as a natural consequence, recommending interference to put it right, or rectification, as it is often called, when the mechanism is wrong or extraordinary, or supposed to be so. Apart from the circumstance that obstetricians are not yet agreed as to several of the particulars of what is called natural mechanism, and that Dr Bedford makes a variety of erroneous, or too loose, or too systematically exact statements in regard to it, we feel sure, that among the best authorities this rectification, or setting nature right when it is supposed to be wrong, is becoming more limited and defined in the extent of its application. William Hunter and Denman found midwifery laden with a farrago of remedies and interferences for the removal of difficulties in labour; these were mostly founded on an ignorant and boastful empiricism, and they nobly swept them from the field. Superior knowledge of what is natural, and their confidence in nature, made this step necessary for them and their followers. Since William Hunter's demonstrations of the anatomy of the gravid uterus, no scientific obstetric acquisition has been made at all equal to that of the true mechanism of delivery by a series of observations culminating in the work of Nægele. But this advanced knowledge of what is natural and common has led to a rank growth of mechanical methods of treatment of what is unnatural and uncommon, which have to be to a great extent mercilessly cut down. The summary statement of the principle of these interferences is this: we now know what is the mechanism of delivery, and in cases where it is not followed, and where delay or difficulty arises, we should force the adoption of it. This looks fair enough, but it is really a very presumptuous argument, and one which in many circumstances is unsound in principle, and most injurious when made a rule of practice.

Although it may appear at first sight reasonable to practise the rectifying of positions, we hesitate not to say that a careful consideration of the matter will lead to the conclusion that, however successful it may sometimes be in practice, it is, upon the whole, an

unreasonable treatment. It is natural to obey, or not to oppose the natural mechanism of delivery (in cranial presentations, for example), if assistance is required in a labour rendered tedious by deficient expulsive power. But this is not rectifying. Rectifying implies that some error in the mechanism is the cause of the tediousness or the difficulty. Yet we fear that the only reasonable and invariably applicable indication of treatment, akin to rectifying, is to follow, or simply not to oppose the natural mechanism in cases where the natural mechanism might have been expected to be adopted, had the powers of labour been competent to complete the process. In using the forceps to complete delivery in an occipito-posterior position of the head still in the pelvis, where there is no derangement of mechanism, we may use the instrument so as to allow of the natural mechanism being continued. In this case we do not rectify the position, for there is nothing to rectify.

We are far from denying that cases occur in which rectification may be attempted, and be a successful treatment. But, as we have already said, the extent of its application is very limited. Elated by newly acquired knowledge of what is natural, many hasty authors and practitioners have on false theoretical grounds recommended rectification in many circumstances in which its use can be followed only by evil results. Such authors forget, that if the arrangements for the natural mechanism are in existence, that mechanism must be followed. If it gets deranged or is not followed, then it is evident that the required prior conditions do not exist. The ordinary or natural mechanism is not natural or fitting to this case, and it is very far from following, as the authors alluded to assert, that the proper course to pursue in laborious labours with extraordinary mechanism is to force them into uniformity with the ordinary mechanism. If the cause of the laboriousness is, for example, say in the conditions of the ligamentous pelvis, then the derangement of the mechanism should be called a departure from the ordinary mechanism, or a variety of it, for it is not unlikely to be, in the case in point, an improvement upon the ordinary course instead of a derangement of it; and any forced adoption of the ordinary mechanism would be illogical in theory and might be injurious in practice.

We shall not pursue this discussion further, but merely illustrate it by an example; and although the whole subject has been introduced by Dr Bedford's overweening belief in rectification, yet readers will find that, in the particular example we proceed to give, Dr Bedford joins with the best recent authorities in repudiating rectification as practically unsuitable.

There is a well-known class of cases familiar to readers of obstetric literature as cases of face to the pubes. Since Nægele's doctrines of the mechanism of labour have been widely diffused, these cases have been the cause of many theoretical and practical mistakes, which we can here only cursorily refer to. Authors of distinction

could easily be cited who entirely confuse these occasional cases of face to the pubes with the ordinary run of cases of occipito-posterior position. The former are cases occurring only occasionally or rarely, the latter are frequent and of constant occurrence; the former are cases in which, under strong pains, and with a dilated state of the passages, the face persists to look forwards as at first, or even by rotation assumes a more direct anterior position, the latter are cases in which labour is generally quite easy, and in which the head rotating assumes, as it descends, an occipito-anterior position; in the former, rectification, if attempted, will be found seldom of any avail; in the latter no rectification is required. This erroneous view, and consequent confusion of two very different classes of cases, has led to a corresponding error in the treatment prescribed. It has been said, "force the head into its right mechanism and all will be right;" the head will advance unassisted, or if assisted, it must be dragged along the route of the ordinary natural mechanism. Such a treatment looks well on paper, and occasionally is good in practice; but it is bad as a rule, and Dr Bedford wisely deviates at this point from the rectifiers, who would make nature square to their theories, and resort to violence when gentle assistance is sufficient. But we are not fully satisfied even here with our author, for not only does he not recommend rectifying, he does not mention it. This may be a venial error in characteristic cases of face to the pubes, but it is a grave omission when it is found also in the directions for treatment by the forceps of a lingering case of ordinary occipito-posterior position. In these last he does not even suggest to the practitioner the permission of the natural rotation, or the favouring its accomplishment; on the contrary, he positively directs the manual rotation by the forceps of the occiput into the hollow of the sacrum!

In his thirty-fifth chapter, Dr Bedford considers the subject of version in pelvic deformity. He devotes a very brief space to it, and, in our opinion, indicates an imperfect appreciation of its advantages and disadvantages, ending by rejection of it altogether. Like every one else, he, as a general rule, prefers turning to forceps delivery when the head is at the superior strait; yet "in the event of a pelvic deformity (he says), such as we have been considering, my choice would be the instrument." In the discussion of the question, Dr Bedford confines himself too much to a single hypothetical case, when the pelvis is three and one-eighth inches in the conjugate diameter, and seems to place too much confidence in ratiocination on the subject. Such ratiocination can seldom be conclusive in midwifery. The elements of the questions raised are never fixed quantities; in the cases before us, where version is recommended as a means of artificial delivery instead of the forceps, we have the pelvic deformity in various forms and degrees, the resistance of the soft parts various, the hardness and size of the child's head various, the force of the uterine pains various. In such

circumstances, it is seldom that ratiocination, apart from practice, leads to satisfactory results. We do not doubt that Dr Bedford has had extensive practice in this class of cases, although he does not say he has; but we should have given more force and weight to a simple statement that he had tried both version and the forceps, and was thereby led to prefer the latter to the former, than to a very imperfect argument on either side. For ourselves, we can have no hesitation in saying that there is a large class of cases of slight pelvic deformity in which version, early performed, presents many advantages over the use of the forceps. In this opinion we are supported by the almost unanimous assent of the practitioners of Europe. The difficulty in the matter lies in defining the class of cases for version. For teaching purposes it may be difficult to limit and define the scope of craniotomy, version, and the forceps, in cases of pelvic deformity. To enter into the subject would lead us too far. But for our author's sake we may mention one set of cases in which we can certainly affirm that no ratiocination can make delivery by the forceps appear better than the more simple operation in practice, delivering by podalic version. It is not rare to meet with cases of slight pelvic deformity when, perhaps in several labours, the child has been born dead, the delivery being spontaneous, or by forceps, but where labour is rapidly and easily and successfully terminated by version performed in an early period of the labour. Such cases have in all modern times been so frequent, that the treatment by version has been a practice constantly in use, constantly recommended, and is one destined never to fall into disuse altogether. If Dr Bedford directs his mind laboriously to this point, he will not only find this out, but be able also to give great assistance to the practitioner by defining the classes of cases in which craniotomy, version, and forceps are respectively to be used. This task is not to be accomplished by aid of pelvimetry and cephalometry alone. Numerous other points must be considered, namely, the stage of the labour, the rapidity and force of it, the clinical history of the woman, etc. etc.

We have already said that Dr Bedford's account of the diseases of the puerperal state is very defective: many important subjects being entirely omitted. One of the most imperfect parts of his work is the chapter on puerperal fever. After first arranging the subject so as to ensure its thorough consideration, and evincing in this arrangement his capacity for discussing it, he then fails to do so, except in the curtest manner.

One of the most important questions in connexion with this so-called fever, is,—Does any such disease exist? Is there any fever peculiar to lying-in women? We hesitate not to say that the use of the general term puerperal fever, except when vagueness, and not scientific exactness, is desired, is a gross error, and can lead only to false views of the cause, the nature, and the treatment of an immeasurably important affection. Some authors go so far as to include

scarlet fever under the head of puerperal fever. Most include erysipelas, as does our author, who also confuses under this term, as his brethren do, poisoning by decomposing animal matter from the dissecting-room, and a variety of other affections. This manifest error is easily accounted for. It has come down to us from our ancestors. It shrouds under the name fever a mass of ignorance which might otherwise appear. But now that anatomical and clinical research has revealed to us a variety of distinct and separate diseases, generally combined under the name puerperal fever, and a variety of causes corresponding in some degree to these forms, it is to be expected of philosophical and guileless authors that they will either enter at length upon the puerperal forms of pyæmia, septicæmia, erysipelas, dissecting-room poisoning, phlebitis, etc. etc., or, confessing the imperfect state of our knowledge of these subjects, avowedly jumble the whole together as puerperal fever, and proceed to describe this nonsense as clearly and pseudo-scientifically as their predecessors.

Our author enters on another great question in regard to this so-called fever. Is it contagious?—a subject much discussed, and to the same extent not cleared up. How can any one describe the qualities of a thing, while the thing itself is unknown, or known to be not a thing, but several separate and distinct things? But such are the amusements of medical philosophers,—seeking, like their theological brethren, to settle questions, in regard to which they should first have inquired whether they can be settled or not. It is a sort of fashion at present to say that puerperal fever is infectious and contagious; but it is not the fashion to act upon that belief. Authors cite undoubted examples of spreading by infection and contagion, and call upon all to assent. Others cite equally strong evidence to show that it is not contagious, and rest in their conviction. In this state the question remains. Of Dr Bedford's chapter on the subject we can say that its reasoning in favour of the contagious view is far from being so convincing as the simple statement on the opposite side, that his distinguished compatriots Meigs and Hodge hold the non-contagious doctrine.



Lehrbuch der Augenheilkunde. Von Dr JOSEF PILZ, Professor der Augenheilkunde an der Prager Universität, etc. Prag: Karl André: 1859. [*A Treatise on Diseases of the Eye.* By Dr JOSEF PILZ, etc.]

To Germany belongs the credit of most of those discoveries which have raised the study of diseases of the eye to its present state of advancement. We allude more especially to the invention of the ophthalmoscope, whereby, within the last ten years, a new era in the study of this particular department of medicine may be said to

have been inaugurated; and by means of which much light has already been thrown upon the nature of many of those complicated, and formerly inexplicable, deep-seated affections of the eye, which were previously placed under the convenient term, amaurosis; and whereby they have been divided and subdivided according to the structure or structures implicated, and the varied nature of the affection.

The various German medical periodicals, more especially the "*Archiv für Ophthalmologie*," contain many very interesting papers embodying the results of careful observations with this instrument by the chief German physiologists and oculists, in many cases combined with valuable pathological researches, whereby clearer and more extended views have been obtained of the functions fulfilled by the different parts of so complex and important an organism, and how the exercise of these functions may be interfered with. It is much to be regretted that the medical schools of Great Britain have had so small a share in the advances that have so recently been made, and that, so far from assisting in the onward progress of the science, they (with one or two honourable exceptions) have done all in their power to retard and arrest it.

In the work under consideration, Professor Pilz has endeavoured to incorporate all the most recent views and researches scattered in the numerous medical works and periodicals of England and France, as well as in those of his own country; thus conferring a great boon upon such as devote especial attention to this subject, by supplying a book of reference wherein full information upon all points connected with the study of diseases of the eye may be obtained. For this alone, Professor Pilz would deserve our thanks, but, in addition, there is very much original research and observation contained in his chapters upon affections of the deep-seated textures, as also in other parts of the work, thereby entitling his labours to a higher consideration than had they been devoted to the production of a pure compendium.

To a minute and accurate description of the anatomy and histology of the various textures entering into the formation of the eye and its appendages, considered separately, and also in relation to each other, the first ninety-five pages are devoted, wherein the views of Brücke, Müller, Kölliker, Bowman, Jacob, etc., are carefully considered. While treating of the differences of curvature existing between the cornea and sclerotic, reference is made to a very interesting series of experiments by Helmholtz with the ophthalmometer (an instrument recently invented, by which the curvatures of the cornea and anterior and posterior surfaces of the lens may be determined), in relation more particularly to the change produced in the curvature of the cornea by an increase of intra-ocular pressure. By these experiments on the dead subject, it has been demonstrated that increased intra-ocular pressure causes diminution of the curvature of the cornea, which becomes more and

more assimilated to that of the sclerotic. That this holds good in the living as well as the dead body is more than probable, from the fact—demonstrated by the ophthalmometer—that there is marked flattening of the cornea in glaucoma, a disease in which increased intra-ocular pressure is the most marked feature.

The description of the minute anatomy of the retina, with its microscopical division into eight layers, and the exposition of the views of various microscopists as to the change in its structure at the macula lutea, are well worthy of attentive perusal. Pilz adheres to the generally-received opinion, that there is an entire absence of optic-nerve fibres at the macula lutea, and that the structure there representing the retina consists of a thick granular layer, several layers of ganglion-cells, and a continuation of the layer of rods and bulbs slightly altered in structure.

The exact anatomy of the muscles of the eyeball is also very carefully described,—a subject of much greater interest and importance than might generally be supposed, upon which many erroneous opinions are held, and upon a correct understanding of which, the explanation of many interesting and otherwise incomprehensible phenomena attending lesions of those structures depends.

The Physiology of Vision constitutes the next great division of the subject, and one which, we are of opinion, has been most ably handled by our author. The following short extract from the commencement of a resumé of the facts as yet elicited, bearing on the power possessed by the eye of obtaining distinct images of objects at varying distances (embodying the researches of Donders, Helmholtz, Graefe, etc.), may exemplify the manner in which this subject is treated

“Every eye has, in accordance with the structure of its optic media, a certain refractive power. Consequently the spot on which the image of any object is produced on the retina, can only remain the same when the object is at a certain distance from the eye; with a change of the latter the image assumes a different position, falling in front of the retina when the object is removed further from the eye, or behind it when the object is placed nearer to the eye. In such cases, instead of a distinct image of the object viewed, diffused rays (*zerstreungskreise*) would strike the retina, and vision would be extremely imperfect did the eye not possess the power of bringing rays from objects at different distances to a focus at one particular point, which power chiefly depends on the refracting apparatus.

“The following are the facts regarding this power of the eye, which is termed the power of accommodation, that have as yet been demonstrated:—

“1. The eye possesses beyond doubt the power of accommodation. The views of those who denied the necessity and the existence of any such accommodation, are, at the present day, considered to have been completely refuted.

“2. This power is only required to enable the eye to perceive near objects.

“3. For the perception of distant objects no accommodation is required.” etc.

As regards the seat of this power of accommodation, Pilz adopts the view most generally held at the present time, and places it in the ciliary muscle, which, in a state of contraction, causes increased curvature of the lens, thus enabling rays from near objects to be

brought to a focus on the retina; and, in a state of relaxation, enables rays from distant objects to be brought to a focus. This view is very much strengthened by the results of a series of experiments with the ophthalmometer, instituted by Helmholtz, which serve to prove that, during the accommodation of the eye for near objects, the curvature of the anterior surface of the lens is greatly, and that of the posterior surface slightly, increased. He denies that the curvature of the cornea is sensibly affected; but how sufficient contraction of the ciliary muscle, to occasion a decided effect on the curvature of the lens, can occur, without sensibly influencing the curvature of the cornea, appears to us to be somewhat of a paradox.

The invention of the ophthalmoscope by Helmholtz, the theory of its construction, the various modifications in size, shape, &c., that have followed its extensive adoption, and the appearances observed in the normal eye by its use, are all very fully and clearly described; and as these are points on which the treatises and text-books in this country give but little information, this part of the work will well repay perusal,—the more so, as without a clear knowledge of them, a correct application of the ophthalmoscope, and appreciation of the phenomena observed, can scarcely be expected.

Much valuable information and many useful hints are contained in the chapter entitled "Examination of Diseased Eyes," more especially in regard to the examination of the field of vision, and of the power and extent of accommodation,—points whereby, in the one case the condition of the retina, and in the other the condition of the refractive media, may, with some approach to accuracy, be ascertained.

As regards the nomenclature and classification of diseases of the eye, there still exists a great diversity of opinion. Most authors agree in classifying the various diseases according to the structure affected, giving to diseases of uncertain seat a separate division. Professor Pilz, however, adopts the very reverse plan, and classifies diseases according to their nature, dividing them into inflammations, non-inflammatory affections of nutrition, breaches of continuity, displacements, affections of accommodation, of motion, and of nervous system, and congenital malformations. Unfortunately, our standard of knowledge is not yet sufficiently advanced to enable us to determine the exact nature of every disease that may present itself, or to distinguish between "non-inflammatory affections of nutrition," and such as are the result of the inflammatory process. Indeed, we are of opinion, that both atrophy and hypertrophy (included by Pilz under the former head) are, in almost every instance, dependent upon and caused by inflammation.

Under the title of "Choroiditis, with Exudation from the Anterior Branches of the Choroidal Arteries," we, with some difficulty, recognise the affection better known by the designation of "Glaucoma,"—a disease, concerning the nature of which, there still exists great diversity of opinion; and although the views adopted by Pilz

are perhaps the most plausible, further proof is yet required ere such can with certainty be regarded as precisely its nature. The phenomena of the disease, according to Pilz, depend upon a swelling of the ciliary processes, and upon effusion into the aqueous and vitreous humours. To the former he ascribes the nervous pain, (ciliary neuroses), the affection of accommodation, the dilatation of the pupil, and the anaesthesia of the cornea; to the latter, increase of intra-ocular pressure, causing flattening of the cornea and anterior chamber, (though how that can co-exist with effusion into the *aqueous* humour we do not precisely comprehend), impaired vision, pulsation in the arteria centralis retinae, cupping at the entrance of the optic nerve, atrophy of the sclerotic at the circumference of the cornea, and the altered circulation in the subconjunctival vessels. That all the symptoms of glaucoma may be explained as the result of an increase of intra-ocular pressure, is now generally admitted; but that that is the result of a form of choroiditis, is by no means so certain, and it would be a matter of regret should the old designation of "glaucoma"—by which it has been long known, and in which no theory as to its nature is involved—be generally discarded, and a new term substituted, founded on a theory as to its nature, regarding the correctness of which, little proof can be cited, and grave doubts are entertained.

The disease termed aquo-capsulitis, kerato-iritis, iritis serosa, etc., and now generally acknowledged to be a combined inflammation of iris and cornea, is considered by Pilz as primarily an inflammation of the ligamentum iridis pectinatum, involving secondarily the posterior surface of the cornea, and the anterior surface of the iris. In support of this view he refers to the fact, that the disease invariably commences as an opacity of the posterior surface of the cornea at its extreme circumference, and that it only *secondarily* spreads over the posterior surface of the cornea, and the anterior surface of the iris. The opacities of the posterior surface of the cornea, he believes, consist chiefly of degenerated epithelium.

In his description of the numerous affections of the retina, choroid, and other deep-seated textures, all the researches and observations instituted on those points in Germany and elsewhere, since the invention of the ophthalmoscope, have been carefully collated,—which, combined with the results of his own extended experience and observation, forms perhaps the most valuable portion of the work. The phenomena observed by means of the ophthalmoscope are most graphically described, and their relation to pathological conditions pointed out; and although ophthalmoscopic investigation may be said still to be in its infancy, this portion of the work abundantly testifies that vigorous and rapid strides have already been made towards the complete elucidation of the numerous obscure diseases to which this organ is subject.

The affections of accommodation—on which subject Donders has lately written with so much ability—are here fully discussed, and

Donders' views and nomenclature explained and adopted. Our author agrees with Donders in referring the condition termed "Hebetudo visus," or "Asthenopia," in most instances, to the existence of hyperpresbyopia—an affection of the refractive media, whereby the patient is unable (except for a short time) to bring divergent rays to a focus on the retina. The explanation given is, that the patient so affected is always inclined to exert all his nervous energy to effect a sufficient curvature of the lens to cause the divergent rays proceeding from objects surrounding him to be brought to a focus on the retina,—in other words, to enable the patient to see distinctly. The nervous energy of the patient soon becomes exhausted by this continued strain, and then the symptoms of asthenopia occur. The fact that those symptoms generally disappear upon the use of appropriate glasses, serves to indicate that they are dependent upon this affection of accommodation.

The last portion of the work is devoted to a consideration of the various operations at present performed on the eye. All the operations, and instruments required in their performance, are most minutely described, and the indications for and against their performance are carefully pointed out. The different methods of operating for artificial pupil, and the circumstances regulating the performance of them are very clearly described. Upon the action of iridectomy in cases of glaucoma he does not express any decided opinion, but seems inclined to favour Graefe's views. The fact pointed out by Graefe, and quoted by Pilz, that ecchymoses usually occur in the retina subsequent to the performance of iridectomy for glaucoma, is very interesting, in connexion with the explanation of its occurrence afforded by the former. He views the ecchymoses as dependent upon rupture of the vessels, occasioned by the sudden diminution of intra-ocular pressure, and consequent over-filling of the vessels, and brings the fact forward as serving to prove the beneficial action of iridectomy in cases of glaucoma.

At the end of the work there are a large number of illustrative plates, both plain and coloured, to which frequent reference is made in the text, and by which the description, more especially of ophthalmoscopic appearances, is rendered more instructive and complete.

As a book of reference, however, this work possesses certain disadvantages, which we hope to see remedied in future editions; for, with few exceptions, no reference whatever is given to the works of the authors whose opinions are quoted, far less to the part of the work to which reference is made. Another disadvantage consists in the absence of an alphabetical index, which must necessarily occasion considerable inconvenience and delay ere the desired information can be obtained. Notwithstanding these drawbacks, we can strongly recommend this work to the notice of the profession,—the more so as it is the only one with which we are acquainted in which complete information, up to a recent date (1859), can be obtained on all subjects involved in the study of this particular department of medicine.

Genealogy of Creation. By HENRY M. A. PRATT, M.D. London : Churchill. Pp. 406.

WE do not know that we can justify ourselves for calling the attention of our readers to this book otherwise than by referring to the "quoddam vinculum commune," which binds all subjects of scientific interest and investigation together. No ingenuity can make anything strictly medical out of it. And the gist of it is made up of an elaborate philological criticism, which we confess ourselves incompetent to follow, and which at any rate lies ten thousand miles out of our way. Still there is a great deal of scientific discussion in it. And this discussion we can confidently recommend to our readers as always ingenious and able, and occasionally original.

The object of the book is to attempt a reconciliation of the Mosaic cosmogony with the discoveries and views of modern science, by a new translation of the record, from what Dr Pratt regards the original and untainted source—the *unpointed* Hebrew text; the pointed or traditionary version being, in his opinion, nothing but a translation, and a translation every way calculated to mislead. The examination of the author's linguistic principles, by which these positions are sought to be established is, of course, as much beside our purpose as it would be beyond our ability. But in his introductory chapters, he gives a short account of the forces whose action on matter we every day recognise, and whose agency during geological epochs we believe to have been the instrument in moulding the crude materials of our system into the forms they now present, and in fitting our globe for the maintenance of organic life, then of animated beings, and finally of man. And we venture to say, that his exposition of the laws to which matter is subjected, and of the forces by which matter, both organic and unorganized, is acted on, as well as the principles which result from the operation of these forces, is that of a man who has carefully studied them, and who understands their relations well. We do not mean to pledge ourselves for the soundness of all his speculations—far from it; but they are always ingenious, and even where they seem fanciful, they are modestly and unpretendingly proposed. And we confess to a feeling both of gratification and pride in seeing a member of our own profession coming boldly into an extra-professional arena, asking nothing but a fair field and no favour, while those whose special duty it ought to be to do battle on the ground which he has selected, seem either altogether disinclined to try conclusions with their assailants, or substitute, if not senseless vituperation, the equally senseless iteration of certain foregone conclusions in the place of an argumentative discussion.

It is difficult to give a specimen from which any estimate could be formed of the mode of thinking and capacity of the author; but if

any of our readers will turn to the chapter entitled "Organic Development" (page 267), and peruse it carefully, we are confident that such of them as have the knowledge of oriental languages necessary to be able to follow the author through the more abstruse portions of his work, will feel inclined to give to these speculations at least a respectful attention. In this chapter there occur some extremely sensible and acute observations on a work which has of late attracted a large share of attention, "The Origin of Species, by Mr Darwin." Our own opinion of that work is, we confess, not entitled to much weight, being not sufficiently versant in the *facts* of natural science; but, given the facts, we venture to think we may be able to form some judgment as to whether or not they are handled in a logical manner. And we confess that our impression is, that the distinguished author stands much higher as a describer, probably also as an observer, than as a thinker or a reasoner. In opposition to Mr Darwin, our author contends—and we think successfully—that the morphological laws in which the former sees so deep a meaning, can only be regarded as the result of the great physiological laws of organization, or rather that they ought to be considered as two different ways of expressing the same thing. But as the organizing processes in both organic kingdoms, if not absolutely identical, are at all events similar and parallel, then if the modes of homologous development (which are just the expressions of physiological laws on which the structure of both organic kingdoms fundamentally depend) are to be interpreted as proofs of unity of descent, as Mr Darwin maintains, it does not seem easy to get quit of the inference that, as all organic beings owe their existence to the same organizing principles, so they must also trace their origin to one common ancestor; from this common ancestor existing genera and species must have arisen, either by systematic development, or by systematic degeneration, according as it belonged either to a high or to a low type. What becomes then of a theory based upon the denial of any law of development whatever? "I believe," says Mr Darwin, "in no law of necessary development."

Again, the three great classes of facts on which Mr D. founds,—known variations in structure, the struggle for existence, and the occurrence (rather production) of varieties, useful for man,—do not seem to warrant the conclusions he deduces from them. A survey of the whole field of organized nature shows the "struggle for life" to be most severe between beings of the *same* species, so that in exact proportion as any variety deviated from its original type, it ought to lessen the severity of the struggle which its descendants have to undergo; at least such must be its tendency, and that tendency must become efficient after the variation has reached the point we now see in existing species; and to suppose that the extinction of species only took place in the early stages of the transition, which we take it must be Mr D.'s position, is an assumption as violent and gratuitous as we can well conceive, especially when we take into con-

sideration the fact, that all variations useful to man, or artificially brought about, so far from having a tendency to persist and establish themselves, not only tend, but virtually do relapse into the form from which they originally sprung, whenever they cease to be subjected to the pressure and care of artificial culture. The chapter, some of the views of which we have endeavoured to compress, is, as we have said, written with ability and vigour. The style is that both of a thoughtful man, and of one who has read much; but if our remarks should meet the author's eye, we would entreat him to recast and break down his sentences, which are greatly too long—imposing a heavy burden on the memory in carrying the meaning of the commencement with us to the end—and giving an appearance of obscurity, not at all inherent in his thinking, which is clear and consecutive. We take our leave of him with great respect for his learning, ability, and good intentions.

Hints on Medical Ethics, being an Address delivered before the University Medical Society, on 10th January 1862. By J. A. EASTON, M.D., Professor of Materia Medica in the University of Glasgow. Glasgow: David Robertson: 1862.

WE are always glad to meet Professor Easton of Glasgow, an old and valued correspondent of this journal and of one, at least, of its predecessors, in the field of medical literature. On the present occasion, he appears to have been called into print at the request of the University Medical Society, while fulfilling a duty equally creditable to him and to the society; giving the countenance of his years and experience to young men still in connexion with the schools. He has possibly done well also, in these troublous times, not to fish in the unquiet waters of medical politics, but to seek in "medical ethics" a resting-place and a theme for instruction. Surely no better subject could be found for such hints as are here presented from the teacher to the taught, in the spirit of mutual confidence and good feeling. And yet we are forcibly reminded, by one or two sentences in this little pamphlet of twenty-three pages, that even in regard to "medical ethics" there may be differences of opinion between men perfectly at one in their main object and general principles. We are not prepared to admit, for instance, that a medical man should be condemned outright for "rushing from the sick-chamber to the kitchen, to superintend the preparation of some culinary compound." Even with the fear of Professor Easton and the "dish-clout" before our eyes, we must plead guilty to having done this more than once; and inasmuch as dietetics is part of the materia medica course, with all good teachers thereof, we have no doubt that Professor Easton has indirectly prompted some of his more active and enterprising students to violate

his own maxim. We have also, on one or two occasions, had something to do with the "making of the patient's bed;" and we think our friend would willingly admit our apology, or at least put us out of his "black" list, if he knew the circumstances. We have never, as it happens, "volunteered to discharge ordinary tonsorial duty;" but we have seen Professor Syme condescend to shave, with his own master-hand, a part considerably less honourable than the beard; and we are not quite prepared to say that the occasion may never arise for the exceptional revival of the old barbi-tonsorial function of the "chirurgion." Abernethy taught his pupils how to make poultices, and it is difficult to tell exactly where the line is to be drawn between the mysteries of the art and the work of common humanity. But we are in a yet more unhappy position still, according to Professor Easton's somewhat sweeping censures. We don't know if we can ever hope to be excused, if we confess to having committed the deadly sin of "remaining successive nights in the patient's house towards the closing scene;" but the truth must come out, and so it is. We are far, of course, from advocating this as an habitual practice; but we should be sorry to see the absolute barrier of "medical ethics" interposed between the practitioner and anything of the kind which he may consider necessary in the circumstances. The truth is, that all unbending codes of medical ethics are apt to become petty tyrannies over the conscience; and even in these generally excellent "hints," we cannot but trace now and then the influence of the all-too-generalizing method which commonly seeks to lay down the law in such cases. There is but one principle which we have found to rule the whole extent of the *ἡθικὴ*, medical and other, without exceptions, and without any margin for selfishness to lay hold upon. It is the very old one, "Whatsoever things ye would that men should do unto you, *do ye even so to them.*" He that can honestly lay this law to his heart needs no other "medical ethics," and can obey no other. But, alas! alas! in the jangling and confusion of this mortal life, who shall say that he could stand with unveiled face before a "medico-ethical association" which should plainly adopt this rule, and try all cases by it?

About the following passage there can be no difference of opinion, and we commend it to the reader as a specimen of the admirable and thoroughly professional spirit in which Professor Easton goes about the work of giving advice.

"Opposed, likewise, to those principles and feelings, which regulate the actions of every conscientious member of the medical profession, is the nuisance, now and then observed, of using remedies and of dealing in pretended new methods of cure, all of which the dealers in them keep profoundly secret. These persons generally select, as the basis of their operations, some fearful malady, against which, the appliances of our art are too often all but unavailing, except in the way of palliation, and thus the very knowledge, honestly avowed by every conscientious practitioner, that the disease is but little under the control of rational medicine, leads the unhappy sufferers to look to any quarter whence relief is

promised, and hence they fall into the hands of the licensed dealers in hidden cures. In order to illustrate the mode of procedure of these personages, it is only necessary to advert to what has occurred, and to what is still occurring every day in cases of cancer. Regularly licensed medical practitioners, there are not many, I am happy to say, who hold out that they have an effectual plan of curing this disease, known only to themselves, but which they refuse to divulge. Now, it is not necessary to this illustration, that I should inquire whether their plan is successful or invariably the reverse, though I must state to you, that so far as my knowledge goes, the latter has uniformly been the result. I am willing, however, for the sake of argument, to suppose that these persons are as successful as I know they have been unsuccessful; I am willing to admit that they really *are* able to cure cancer, and I ask you what are you to think of men, if men they can be called, who show themselves by their conduct to be utterly devoid of sympathy for their suffering fellow-creatures?

. Gentlemen, it is the boast of medicine, that she is actuated by the most humane, the most disinterested considerations, it is her boast that she is self-sacrificing in her exertions and diffusive in her aims, and hence, if any real discovery has been made, if any different plan of treatment has been found successful, if any new remedy has been introduced or any old one been revived, forthwith the intelligence is promulgated, far and near, through the medium of the press, and thus the poorest sufferer in the most distant corner of the globe into which civilisation has penetrated receives the boon which medical science is only too happy to bestow. As an illustration of the benevolent spirit which actuates every right-minded member of the medical profession, and in noble contrast with the selfish conduct of the dealers in secret remedies and pretended new methods of cure, let me, in a single sentence, remind you of the behaviour of the immortal Edward Jenner in connexion with the discovery of vaccination. No sooner did it flash upon that great mind, from the casual remark of the young dairymaid at Sodbury, that the matter of the cow-pock might be a protective against small-pox, than he endeavoured to stimulate all his professional friends to the investigation of the problem which he was anxious to solve, and so importunate was he in his appeals to them, that it is recorded, that the Alveston Medical Club nearly voted him a bore, because of his constant recurrence at their meetings to his favourite topic. Unmoved, however, by numberless discouragements, he prosecuted his inquiries for more than twenty years, 'firmly believing,' to use his own language, 'that what he was engaged in would prove of essential benefit to the human race.' Success at length crowned his exertions and he was rewarded by the realization of all his hopes, under the following circumstances, which I shall relate to you in his own words from a letter that he addressed to his friend Edward Gardner: 'You will be gratified in hearing that I have at length accomplished what I have been so long waiting for, the passing of the vaccine virus from one human being to another by the ordinary mode of inoculation. A boy of the name of Phipps was inoculated in the arm from a pustule on the hand of a young woman (Sarah Nelmes), who was infected by her master's cows. Having never seen the disease but in its casual way before, that is, when communicated from the cow to the hand of the milker, I was astonished at the close resemblance of the pustules, in some of their stages, to the variolous pustules. But now, listen to the most delightful part of my story. The boy has since been inoculated for the small-pox, which, as I ventured to predict, produced no effect. I shall now pursue my experiments with redoubled ardour.' This decisive experiment was performed in the year 1796, on the 14th May, a day which is celebrated at Berlin as an annual festival in honour of our illustrious countryman."

Part Third.

PERISCOPE.

PRACTICE OF MEDICINE.

ON OXALURIA. BY DR MORITZ SMOLER, PRAGUE.

[UNDER the title of "Studien über Oxalurie," a very interesting and important contribution from the pen of Dr Smoler, assistant at the Second Medical Clinique in Prague, has lately appeared. The author has taken a juster and more comprehensive view of the subject than has been done hitherto by any foreign writer; but, while corroborating many of the observations of British physicians in not a few particulars, the results at which he has arrived differ materially from theirs. We propose to give our readers a tolerably full analysis of Dr Smoler's paper, and, for the better understanding of the subject, we shall also, here and there, where specially called for, introduce some explanatory observations of our own.—J. W. B.]

1. *Historical Retrospect.*

The history of this disease begins, in 1820, with Prout. Though it is pretty certain that, as early as 1787, Brugnatelli found oxalate of lime in the urine, without, however, having recognised it; although also, more recently, Fourcroy found the same in the urine of a child suffering from worms; it was nevertheless Prout (Researches regarding the Nature and Treatment of Gravel, Calculus, and other Diseases, Weimar, 1823), who to the so-called Oxalic Diathesis assigned a special importance, and at a later period (Diseases of the Stomach and Urinary Organs; German of Krupp, Leipzig, 1843) introduced into nosological classification Oxaluria as itself a fixed form of disease, specially characterized by nervous and dyspeptic symptoms. Following the example of Prout, Willis (The Diseases of the Urinary System; German of Heusinger, Eisenach, 1841) devoted a special chapter to this disease. Prout had, by the physical characters of the urine only, determined the presence of oxalate of lime—(on examination he found no sediment in such urine, while it possessed a pale citron or greenish colour, and was of medium specific gravity); and in proof of the correctness of the opinion he entertained, had published an account of the accompanying "nervous symptoms," in connexion with the constitutional signs. This was not enough for Golding Bird; he established the accuracy of Prout's conjecture regarding the presence of oxalate of lime in the urine by microscopical examination (Urinary Sediments, in Golding Bird's Lectures on the Physical and Pathological Characters of Urinary Deposits; Vienna, 1846).

While attention was thus directed to the subject in England, the oxalate of lime was also being noticed in France. Vigla (Etude Microscopique de l'Urine) mentions it, if not expressly, yet as having found it in urinary sediments, but without distinguishing it. Donné believed it at first to be rare, but afterwards found it abundant enough, more especially in connexion with spermatorrhœa (Die Mikroskopie als Hilfswissenschaft der Medicin; German of Gorup-Besanez, Erlangen, 1846). Rayer was of like opinion: he at first maintained that oxalate of lime was very seldom found; for, in his famous work on Diseases of the Kidney, he stated that it was seldom known to appear. In doing so he referred to the well known case of Brett, without attaching any particular importance to it. Brett proved satisfactorily that he had many times seen oxalate of lime. Bourchardat published many observations on the subject (Annuaire de Therapeutique, for 1850, p. 298); he appears to be

the only one, as an author, in France who has adopted to the fullest extent the view as to the importance of Oxaluria,—directing attention to the occurrence of enfeebled vision in connexion with various morbid conditions of the urine, namely, Glycosuria, Albuminuria, Hippiuria, Benzuria (generally co-existing with albuminuria), and Oxaluria. The latest French work on the subject is by Gallois (*Mémoire sur l'Oxalate de Chaux dans les Sediments de l'Urine, dans la Gravelle, et les Calculs*, lu à la Société de Biologie). In this important work Oxaluria, as such, is struck out of the nosological system, and the conclusion is arrived at that oxalate of lime may be temporarily present in the urine of persons in health, of different ages and of both sexes; that it is very frequently met with in certain diseases, especially in cases of spermatorrhœa, in nervous complaints, and in dyspepsia; and, finally, that it may be temporarily produced or increased by certain kinds of food or medicine, and that the so-called Oxaluria of English physicians requires no particular treatment.

Returning now to England, we find that after Golding Bird had showed the frequency of oxalic deposits in the urine, and pointed out a simple means by which the presence of oxalate of lime might be determined, a large number of monographs appeared on the subject. There was the same result here as is met with in the case of other newly discovered diseases; as soon as for a group of symptoms having a resemblance to a special disease a name has been discovered or invented, numerous cases of this new disease emerge in all directions and are recorded in the journals. Among the authors of papers published in different journals, the following names only need be mentioned:—Henry Brett (70th volume of London Medical Gazette—a paper inaccessible to me, but well known from numerous quotations); afterwards, J. W. Begbie (on Characters of the Urine containing Oxalate of Lime, *Monthly Journal*, 1848, No. 21); Begbie, senior (On Stomach and Nervous Disorder, as connected with the Oxalic Diathesis, *Monthly Journal*, 1849, No. 38); Garrod (Oxalic Acid in the Blood in Disease, *Medical Times*, 4th July 1848); Robertson and J. W. Begbie, who found oxalate of lime in the urine of cholera patients; MacLagan (On the Characters of Urine depositing Oxalate of Lime, *Monthly Journal*, 1853, No. 156, new series, 48); James Gray (*Journal of Glasgow*, 1854, known to me only by extracts); and last of all, Walshe (*Monthly Journal*, 1849, No. 31,—Note on the Occurrence of Oxalate of Lime-Crystals in the Urine).

Of American physicians who have cultivated this subject, there are, specially, Frick of Baltimore (Remarks on the Oxalic Acid Diathesis and its Treatment, see *Gazette des Hôpitaux*, 1849); Baron, of Boston, who found oxalate of lime very frequently in the urine of various diseases (in 380 out of 909 cases); and Neumann, who made the presence of oxalate of lime in the urine a valuable aid in diagnosis. He divided lumbago into: rheumatic, with a sediment of uric acid in the urine, and neuralgic, with a sediment of oxalate of lime,—prescribing for the latter quinine and iron.

In Germany and Italy, the doctrine of Oxaluria has never been highly esteemed. In the former, Küchenmeister was probably the only one who published a case of Oxaluria. The following authorities, however, have had special merit in collecting the different views regarding Oxaluria:—Lehmann (*Lehrbuch der Physiologische Chemie*, 2 Auflage, Leipzig, 1850, 1 Band); Heintz (*Lehrbuch de Zoochemie*, Berlin, 1853); Zimmermann (in seinem *Archiv für Pathologie und Therapie*, 1854, 1, 2); Beneke (*zur Physiologie und Pathologie des Phosphorsauren und Oxalsuren Kalkes*, Göttingen, 1850; *zur Entwicklungsgeschichte der Oxalurie*, Göttingen, 1852); lastly, Neubauer (*Ueber Oxalsäurebildung*, im *Archiv für gem. Arb.* iv. Band, 1 Heft, 1858). There is also to be mentioned, J. Vogel (Neubauer und Vogel *Anleitung zur Analyse des Harns*, 2 Aufl., Wiesbaden, 1856).

Whilst Oxaluria by the writings of Prout, Golding Bird, Brett, Begbie, and Frick, especially through the two first-named authors, stood in high regard, opposition to the views they promulgated arose, owing to a rational con-

templation of the subject; and it is interesting to note that in England, from whence the doctrine of Oxaluria emanated, where it sprung, and was most diligently cultivated, the objections to it also first originated. Bence Jones—according to whose investigations (Medico-Chirurgical Transactions, 17th volume, page 146) Vigla was the first who described the crystals of oxalate of lime in urinary sediments, but without recognising them as such, regarding the oxalate in part as common salt, although also apparently distinguishing it from the latter;—was one of the earliest to oppose the independent existence of Oxaluria; but in his opposition he exceeded all bounds. He had, for example, found oxalate of lime very frequently in the urine of healthy persons (but then only in a passing way, to which, indeed, no importance need be attached, and hence resulted his error), and concluded that it is of no value in relation to the animal economy, the organism not being injuriously affected by its formation. He held the oxalate of lime, as MacLagan had previously done, to be the accompaniment of various diseases (On Animal Chemistry, in its Application to Stomach and Renal Diseases, London 1850, page 63), especially of indigestion with flatulence, of skin diseases, acute rheumatism and gout, sciatica, and of various diseases of women and children; whilst in a still earlier publication he argued in favour of the harmlessness (unschädlichkeit) of oxalate of lime in the urine, seeing that for the most part it is to be found in the case of persons not absolutely ill, but suffering from indigestion (Philosophical Transactions, 1845, i. page 344.) Owen Rees, distinguished for the clearness, moderation, and accuracy of his views, as well as for the simplicity of his explanations—*simplex sigillum veritatis*—grounding on his own experience that he had often treated patients in whom the mulberry calculus had latterly appeared, but who had not presented the symptoms of the so-called Oxaluria, threw doubt on the existence of such a form of disease. Eleven years later he quite decidedly denied the existence of Oxaluria as an independent affection (On Calculous Disease and its Consequences, being the Croonian Lectures for the year 1856). He had found it frequently in gouty patients, and supposed that oxalate of lime is formed from uric acid; while he also proposes acids, and specially nitric acid, as remedies for the oxalic or uric acid diathesis, maintaining silence, however, respecting the symptomatic treatment. Of great importance, nevertheless, was his expressed opinion that soda, rhubarb, columba, Vichy water, etc., may be useful, not by acting on the urine, but by improving the digestive and biliary functions. Walshe gave a serious blow to the doctrine of Oxaluria, when he published a table of the most different diseases, in the urine of which oxalate of lime was found. C. B. Rose, distinguished by his excellent work on the Occurrence of Oxalate of Lime in the Urine after the use of various articles of food containing oxalic acid, emphatically denies the production of the nervous symptoms signalized by Golding Bird; and although MacLagan, later, collected a series of thirty-four tolerably different diseases—with this feature common to all, that oxalate of lime occurred in the urine,—he does not exhibit any particular diagnostic mark by which the presence of the oxalate is to be inferred; and at the end of his work (*loc. cit.*), he expresses a decided opinion against the existence of the so-called oxalic diathesis, the Oxaluria of authors; and further states, that oxalate of lime will probably be found in the urine of most chronic diseases. Begbie separates Oxaluria as a malady "*sui generis*," from the presence of oxalate of lime in the urine of certain diseased states (melancholia, anæmia, etc.). Gallois, in his afore-mentioned memoir, showed on the one hand the non-essential nature of Oxaluria, and on the other the frequency of the occurrence of oxalate of lime in certain diseases (spermatorrhœa, nervous complaints, dyspepsia.) Beneke's two works were, however, decisive; for, first, he gives a clear and unhesitating verdict against the existence of Oxaluria as a malady "*per se*;" secondly, he points out that oxalate of lime is the frequent accompaniment of many diseases, these both acute and chronic; thirdly, he affirms that there are certain diseases in which the crystals are never detected, while he has endeavoured to make their presence in, or absence from the urine, an aid to diagnosis in certain obscure forms of disease. Here-

after some American, and, in their proper place—the clinical portion of this work—certain English and German authors will be referred to, who have availed themselves of the presence of oxalate of lime in large amount, as a means of directing treatment—whether rightly or otherwise this is not the place to determine;—the design of the following pages is to inquire how far the presence of oxalate of lime in the urine can be made serviceable for diagnosis either to the exclusion of certain diseases, or, in doubtful cases, for the corroboration, it may be the abandoning, of an opinion.

II. *The Oxaluria of Authors.*

There is full employment for the term Oxaluria, if by it is understood, simply, the presence of oxalate of lime in the urine, and nothing further. It is a very valuable symptom in directing attention to the disorders of the digestive organs and of the nervous system; its importance is not sufficiently appreciated, and the diligent examination of the urine for oxalate of lime cannot be too highly valued, especially in cases where gastric or nervous symptoms form the character of the disease, or where, perhaps, there exist other symptoms of a complicated nature. In this sense may the word Oxaluria be henceforward applied; but so soon as there is understood by this term an independent disease, the principal symptom of which is the presence of oxalate of lime in the urine (just as the presence of sugar in the urine represents a special disease, Diabetes Mellitus), then must diseases of the most various kinds (such as Catarrh of the Stomach, Cancer of the Stomach, Tuberculosis, Disease of the Heart, and various morbid conditions of the brain and nervous systems) no longer be considered as such, but, on the simple ground of the presence in the urine of a sediment of oxalate of lime, must be removed from their usual places in the nosological arrangement, and Oxaluria be considered as a disease *sui generis*, for which a separate, nay, even a specific treatment, independently of all the accessory circumstances of the case, is to be applied (almost similar to quinine in intermittents, mercury or iodine in syphilis), then the term must be abandoned, just like such other terms as Azoturia, Anazoturia, Albuminuria,—conditions of disease, but not independent morbid conditions. Shortly the same view may be expressed as follows:—Oxaluria undoubtedly exists as a symptom, and, moreover, is of very frequent occurrence, and may even demand a special treatment, but Oxaluria, as an independent disease, the so-called Oxaluria of authors, cannot be admitted. A short sketch of the complex symptoms of Oxaluria will follow, and it will be seen how various are the diseases collected under the one head of Oxaluria.

The disease then, as described by authors, is specially characterized by nervous and dyspeptic symptoms. The mind becomes depressed, hypochondriasis exists, and the patients fear that they are about to become the subjects of fatal disease, especially pulmonary consumption and cancer of the stomach; they are equally indisposed and unfit for mental or bodily exertion. Violent palpitation of the heart is often present, and then the fear of consumption is displaced by that of heart disease. Sleep is disturbed by frightful dreams, and results in no refreshment. Headache and neuralgic pains are seldom absent. A fear of death accompanies the disease; or, this fear changes into the opposite symptom, the patient seeks death by suicide. Dyspeptic symptoms exist from the commencement; the tongue is furred; the appetite is impaired; there is perhaps a desire for saccharine articles of food; acidity, heartburn, great thirst, pain in the stomach, vomiting ending in hæmatemesis, pain in the back, flatulence, diarrhoea, with alternating constipation,—in a word, all the different symptoms of stomach complaints, accompany this disease. Cough, sometimes ending in tubercular disease has been noticed often enough. The hair becomes gray and falls out; the sight is dim; in one case amaurosis was observed (Frick); the skin is dry, and subject to eruptions of acne and boils (Prout). The Muscular system is weak and atrophied; the patient becomes unable for even the slightest muscular exertion; the pulse is small and weak; there is pain in the kidneys and bladder, sometimes spermatorrhœa; there is rapid emaciation

(specially noticed by Golding Bird); the mind becomes weakened; in women, there is irregularity of menstruation. As to the *urine*: Amber coloured (the colour being an indication of the presence of oxalate of lime,—Begbie); darker than in health, sometimes greenish-yellow (Prout). The density is increased—average 1·023 (1·008 to 1·035), Maclagan; 1·028, Begbie; 1·020, Prout; 1·015 to 1·025, Golding Bird. Begbie noticed it very high, 1·035, once 1·040. The smell is aromatic, like sweetbrier, especially when warm. The reaction is usually decidedly acid, rarely neutral, never alkaline. As to the quantity voided, observations differ. Prout says it is increased; Golding Bird doubts this, and ascribes the apparent increase to the frequent desire of the patient to micturate; the quantity passed, however, not being greater than in health. Begbie mentions, sometimes an increase, sometimes a decrease, in the amount of urine; the former occurring in connexion with a paler urine of low density, the latter with a darker urine and of higher specific gravity. Along with the oxalate of lime, uric acid often exists, and generally much epithelium; the presence of the latter Golding Bird assigns as a reason for always looking for oxalate of lime, and to it, along with the other organic ingredients in the urine, he ascribes the emaciation which characterizes the disease. Albumen has been found in some cases (G. Bird; Begbie). Sugar (Begbie; Prout). Cystin (Maclagan). Blood, pus, spermatazoa (Wolf of Bonn, and specially Donné, latterly Gallois).

The causes of Oxaluria merit as careful an inquiry as its symptoms. The hereditary character of it is acknowledged. Begbie found oxalate of lime in the urine of a diabetic child, whose father had suffered from Oxaluria.

By Prout, Oxaluria was specially connected with the sanguine and melancholic temperaments. As its predisposing causes have been ranked the following: chronic derangement of the general health, the consequence of some acute illness, as dyspepsia, syphilis, injudicious employment of mercury, in the female too frequent confinements, or protracted lactation, lastly, excessive venereal indulgence, etc. (Golding Bird). Among exciting causes are placed, first, residence in a cold, damp, or marshy situation; and, second, the abuse of saccharine or amylaceous articles of diet (Prout, also Beneke). Prout recognised a connexion between Oxaluria and Diabetes; but this was contradicted by Golding Bird and Bence Jones. Lehmann assigns importance to the plentiful use of butcher-meat, as giving rise to the abnormal condition of the urine, while Maclagan regards the substantial food of Great Britain as a fruitful source of the indigestion which is so marked a feature of Oxaluria (Prout and Golding Bird). Alkaescence of the blood is referred to by Prout as a cause of the disease. In addition to such causes are, a diet rich in oxalic acid, chills, irritation of the kidneys, the introduction of bougies, masturbation, certain epidemic diseases, chiefly cholera (Prout, Begbie on the Urine in Cholera, Monthly Journal, 1849); also various chronic ailments, especially tuberculosis and scrofula (Prout, Beneke, Balman, Researches and Observations on Scrofulous Disease of the External Glands, Liverpool, 1852; Golding Bird, however, denies the frequent association of oxalate of lime with tuberculosis), chronic eruptions, affections of the cellular tissue and bones. Depressing mental emotions are considered to predispose powerfully to the occurrence of Oxaluria. It may be mentioned that Morelli, in twenty-three patients suffering from pellagra, only found oxalate of lime once. He is opposed to the view of Oxaluria being a disease *sui generis*, and affirms that the representation of it by Golding Bird is no inapt description of pellagra. *Treatment*.—The great remedy for this disease is a mineral acid, particularly a combination of nitric and muriatic acids given alone, or in some bitter infusion, as gentian or columba. Quinine, iron, colchicum (Golding Bird). Nitrate of silver (James Gray). Sulphate of Zinc. Mineral waters of Vichy are also employed. In addition, as adjuvants to treatment, may be reckoned, warm clothing (flannel jackets), regular exercise in fresh air, residence at the seaside, sailing on the sea, salt-water baths, and a suitable diet. Begbie lays stress on the benefit of sponging with tepid water.

III. *What is the Oxaluria of Authors?*

A careful consideration of the symptoms which were described in the last section as accompanying Oxaluria, renders it clear that there is no independent disease to which the name Oxaluria can be applied, but that the symptoms of different diseases in which oxalate of lime is present in the urine have been brought together, and from them a caricatured representation of Oxaluria has been constructed. Especially, there are all the symptoms of various affections of the stomach, characterized in the most marked form; then there are the signs of anæmia or chlorosis, which gives a rich contingent to the symptoms of Oxaluria; finally, there are nervous symptoms of the most various kinds, sometimes associated with those of stomach disorder and blood impoverishment, sometimes occurring quite independently of either (neuralgia, hysteria, hypochondriasis, etc.). Golding Bird, indeed, regarded these symptoms as characteristic of Oxaluria. The anæmia mentioned above sometimes appears as an independent disease, sometimes as the result of various weakening diseases, such as typhus. Chronic ailments with which the symptoms of Oxaluria are found associated are, affections of the lungs and heart (Maclagan); spermatorrhœa; perforating ulcer of the stomach; uterine complaints; hæmorrhoids; altered psychical states, etc. The vaunted treatment of this ailment is one which has been found useful in the case of various chronic stomach disorders; useful, too, in anæmic conditions, whether independent or arising from various derangements of the nervous system; and thus the treatment of Oxaluria affords another proof of the correctness of the opinion that Oxaluria, as an independent disease, does not exist. Bouchut's limited doctrine of nervosismus (*De l'état nerveux aigu et chronique, ou Nervosisme*, Paris, 1860) may be compared with the far more widely extended doctrine of Oxaluria. It is as little true of the former as of the latter, that it is a disease "*sui generis*." This, however, is what its author aimed at proving. If attention had been given to the subject it is likely that in many of his so-called cases of nervosismus Bouchut might have detected oxalate of lime; thus they might have been converted into examples of Oxaluria. To complete the proof of the non-existence of Oxaluria, allusion must now be made to the recorded cases of the disease, and their true nature examined. Of the six cases given by Golding Bird, the first was one of syphilis injudiciously treated with iodine; 2d, A case of gravel with mulberry calculus (truly an instance of oxalic diathesis); 3d and 4th, Cases of uterine ailments, with associated nervous symptoms, leucorrhœa, and dyspepsia. 5th and 6th, Cases of masturbation and excessive venery. Begbie's four cases were as follows:—1st, Gastralgia; 2d, Chronic stomach catarrh; 3d, Arthritis; 4th, A tubercular case, complicated with Bright's disease, and terminating fatally by the supervention of pleuro-pneumonia. Gray's five cases were: 1st, Chronic stomach complaint; 2d, Angina; 3d, Diarrhœa; 4th, Stomach catarrh; 5th, Perforating ulcer of the stomach. Maclagan offers, in a tabular form, short notices of 35 cases as follows:—Chronic stomach complaints (1, 2, 4, 5, 7, 8, 10, 11, 13, 15, 16, 18, 20, 22, 23, 24, 26, 27, 29, 31, 32); leucorrhœa (3); bronchitis (6); spermatorrhœa, with onanism (9); chronic cough, probably connected with emphysema (12, 33); gout (17); epilepsy (19, 35); tuberculosis (21); chlorosis (25, 28); chronic heart disease (30); child suffering from worms (14). Küchenmeister's case was probably one of chronic stomach catarrh; and the instances recorded by Frick are 1 of facial tic, 1 of anæmia with associated dyspepsia, and 1 of hypochondriasis (with fear of consumption), and the last, severe tic, with probably a syphilitic taint.

Thus Oxaluria is seen to be a morbid condition occurring in connexion with many different diseases, in which the presence of oxalate of lime in the urine is regular, or, at all events, frequent.

IV. *Presence of Oxalic Acid.*

Oxalic acid and its salts, especially oxalate of soda, have been employed therapeutically; as by Brenner v. Flasch (*Ungar Z. f. Nat. und Heilkunde*,

1855) for inflammation of the uterus and ovaries, as well as for menstrual derangements; by Hastings (Treatment of Pulmonary Consumption, London, 1854) for advanced phthisis, etc.; lastly, they have been taken as a poison. The doubt raised as to the passage of oxalic acid by the urine has been refuted by Schmidt (Entw. e. Untersuchungsmethode der Säfte, Leipzig u. Mitau, 1846), although it may with accuracy be maintained that the larger portion of oxalic acid leaves the system by the intestines (Researches of Piotrowski, Archiv. für phys. Heilk., 1857). As to the diffusion of oxalic acid in nature, it is limited in the *mineral* kingdom, being found united with iron (in Humboldtite); but it exists largely in the *vegetable* world, seldom, however, in a free state. Oxalic acid occurs, though rarely, in the free state, for instance in *Boletus sulphureus*, and in some species of *rumex* and *oxalis*; it is much more frequently met with as oxalate of lime, which is scarcely ever entirely absent from plants. Its most common form is needle-shaped (in *Oenothera biennis* by Link), other shapes are met with, very rarely the octohedral crystals. Schmidt (Annalen der Chemie und Pharmacie, lxi., 304) found oxalate of lime in plants largely provided with sap. The cactus has the largest amount. The chick-pea (*Cicer arietinum*), much liked in the south of Europe, and other plants prized as vegetable fruits, contain much oxalate of lime; the sorrel, used in France chiefly, and in Bohemia. Rhubarb, a common ingredient of dumplings and pies in England, also in Asia, and its root, contains much oxalate of lime. Whether the love-apple (*Solanum lycopersicum*) contains oxalic acid or an acid peculiar to itself is not yet decided (Hecht, Journal d. Pharmacie, xviii. 106). The following vegetables and fruits also contain oxalic acid:—Red turnip, cauliflower, asparagus, banana, garlic, Portugal onion, the small garden turnip, spinach, apples (Oxaluria is said sometimes to occur after eating apples), carrot, orange, pomegranate, grape, parsley, etc. Of medicinal plants which contain oxalate of lime, the following may be enumerated:—*Asclepias* (*Thapsia* A., the deadly carrot plant), bistort, gentian, Florentine Iris, mandragora, tormentilla, saponaria, valerian, zedoary (*Kumpferia rotunda*), squill, etc. Further, the bark of the cascarilla, cassia, simaruba, elder flowers, etc. In the families of plants now to be named, oxalic acid also exists:—*polygonaceæ*, *juglandæ*, and *aurantiaceæ*, etc. Schmidt discovered the acid in the dregs of beer. It remains to be mentioned that, by Scheele in 1776, oxalic acid was discovered by the action of nitric acid on sugar; that about the same time Wiegleb pointed out the peculiar acid in wood sorrel; and that, in 1784, Scheele confirmed the identity of the two acids.

In the *animal* kingdom, oxalic acid is not less diffused. It is abundant in the urine of horses, furnished, as Golding Bird believed, from clover mixed with the hay. Oxalate of lime is found in the urine of all animals feeding on vegetables, also in the urine of dogs and cats. Lassaigne discovered oxalate of lime in the material which floats in the allantoin of the cow. Small crystals of the salt are found in the gall-bladder of oxen, dogs, rabbits, and pikes; also in the excrement and biliary duct of the caterpillar.

In the human subject it was long denied that oxalate of lime might appear accidentally in the urine of perfect healthy individuals; it has recently been shown that it may appear as a temporary phenomenon, as in the urine of persons in perfect health; it has also been detected in the gall-bladder, the Fallopiian tubes, and round ligament of the uterus, in gall stones, in expectoration from the lungs. Garrod found oxalate of lime in the blood of a patient suffering from Bright's disease and pleuritic effusion, later also in cholera. Oxalate of lime is found in the urine in many diseases, also, with other ingredients, in urinary calculi, and comprising the mulberry concretion, as first discovered by Wollaston (Philosophical Transactions, 1797). Two years subsequently it was confirmed by Fourcroy and Vauquelin, later by Brandis. The first to describe the symptoms connected with the formation of oxalate of lime was Prout (Philosophical Transactions, 1808), afterwards Pearson, Henry, Gaultier de Claubry, Marcet, Prevost, and others. It must not be forgotten that Brugnattelli found oxalate of lime as early as 1787, though he did not recognise it. The frequency of the oxalate of lime calculus varies greatly. In the

Hunterian Museum it forms scarcely four per cent. of the whole collection. In Norwich (Cross' Museum) Marcet found, among 181 stones, 41 of oxalate of lime. In the museum of Guy's Hospital, among 81 stones there is not one of this nature. Of 218 calculi, Smith found 33 to consist entirely of oxalate of lime. Segalas (Essai sur la Gravelle, Paris, 1839) teaches that in young people the mulberry calculus is most common; and Magendie first directed attention to the fact of its occurrence after eating abundantly of sorrel (Ueber die Ursachen, symptome und Behandlung des Grieses und Blasensteises, Deutsch von Zoellner, Leipzig, 1820). Ratier found oxalate of ammonia in the urine, while Devergie (Archives Generales de Medicine, vii. 461) and Bécларd have stated the same.

v. *Form of the Oxalate of Lime in the Urine, and Method of Examination.*

Oxalate of lime occurs in the urine in various forms; the most common is that of octohedral crystals. To determine their existence, the microscope must be employed. Such crystals might possibly be confounded with those of phosphate of ammonia or magnesia, but, in the latter case, the alkalinity of the urine will distinguish them. Urine containing oxalate of lime is of acid reaction. (Schmidt's work is referred to in connexion with the crystals.)

A second form of the crystals of the oxalate of lime, rarer far than the former, is the dumb-bell (Golding Bird, by whom they were first described) sand or hour-glass form (Bencke). Golding Bird explains these as oxalate of lime + urea — water, while Frick believes them to be a form of uric acid.

A third form of oxalate of lime crystals is the single kidney (Begbie) blood-corpuscle form (Bence Jones) also observed by Donné. Begbie likens the kidney form to broken dumb-bells, which opinion Bencke also expresses (Zur Physiologie und Pathologie, etc., page 55). The figures 4, 5, 6, in the first plate of his work show this.

A fourth form—quadratic pillars with pyramidal bases (Bencke)—is to be allied with the first or octohedral form, just as the third-mentioned shape is to be regarded as a variety of the second.

The examination of the urine for oxalate of lime requires no special dexterity. Place the urine in a conical glass vessel, and allow it to stand for from twelve to twenty-four hours; a sediment will fall; then pour off the uppermost portion of the fluid, and from what remains place a drop on a glass slide under the microscope. (When a small quantity of the sedimentary urine is gently heated in a watch-glass, while a rotatory motion is given by the hand, the deposit of the crystals is greatly favoured, and they often appear in the form of an impalpable white powder in the centre of the glass. Let the urine then be removed by means of a pipette, and a little distilled water substituted before the microscopical examination is made.) It is not necessary, like Lehmann, to have the urine frozen, or, like Golding Bird, to employ a complicated apparatus. The urine need not be divided—it being unnecessary to examine separately the *urina sanguinis*, *chylis*, et *potus*;—nothing is thereby gained. The theoretical notions regarding the increased amount of oxalate of lime in the morning urine, owing to its conversion into carbonic acid being interfered with by weakening night perspirations, do not hold good; for at times the *urina chylis* contains most of the crystals, and often there is no perceptible difference. Besides, it is very doubtful if any proper conception as to the amount of oxalate of lime present can be formed from the mere number of the crystals.

vi. *Physiological Remarks.*

Here a reference can only be made to some of the more important theories. Prout regarded the "*fons et origo mali*" in Oxaluria as a disorder of the digestive organs. He traced the oxalic acid to substances taken as food, especially the saccharine, and probably also the albuminous and oleaginous matters. Bird advanced another view, namely, that under depressing influences of the nervous system a change in the constitution of the urine is effected. An atom of urea, with two equivalents of water, is, by the loss of one atom of oxygen,

converted into two of oxalic acid; and thus an oxalate of ammonia may be formed, but from the great affinity of oxalic acid for lime, the oxalate of lime is ultimately originated. Dr Bird had already described the nervous symptoms as being characteristic of oxaluria; the foregoing explanation accordingly lent a new support to his doctrine. Lehmann ascribes the origin of the oxalate of lime to the use of the acid plants (before mentioned), and to interference with the function of respiration. Schmidt, founding upon the insolubility of oxalate of lime, believes that an oxalate of lime and albumen is formed, that this is decomposed by the acids of the urine, and that oxalate of lime remains behind. Beneke found the origin in mal-assimilation of the nitrogenized substances, while MacLagan has in part adopted the theory of Lehmann and in part that of Beneke. In the opinion of Owen Rees the oxalate of lime arises in the urinary bladder from a molecular transposition of the elements of uric acid and urates. Vulpian attaches importance to the presence of epithelium in the urine in large or considerable amounts. Gallois, lastly, mentions that, by an increased oxidation of the material from which uric acid is formed, the oxalic acid is created. This, however, is far from a correct opinion; for in the presence of oxalate of lime in the urine there is no evidence of an increased, but of a diminished, process of oxidation. It has further been maintained, that an increase of oxalate might be observed under the following circumstances:—1. By the abuse of vegetable food, and specially of sugar and starch. 2. By the introduction of vegetable acid salts into the system. 3. By the use of effervescing drinks, especially beer charged with carbonic acid, and other carbonic acid beverages. 4. By the abuse of the nitrogenized articles of diet (Beneke, Bird). 5. From an habitually disordered respiration (the cause of which may be seated in the lungs themselves, or be determined by muscular weakness, or derangement in the central or peripheral nervous systems, etc.).

All these conditions amount to a *disturbed oxidation*, or to a *hindered transformation* into carbonic acid as the determining condition. The researches of Neubauer show that uric acid is not the only substance capable of being converted into oxalic acid; indeed, uric acid, kreatin, guano, starch, grape-sugar, sugar of milk, lactic, tartaric, malic, and citric acids, succinic acid, leucin, tyrosin, valerianic, butyric, metacetic acid,—all yield by the same process oxalic acid. The two following suppositions require notice. 1. That of Donné, who ascribes the origin of oxaluria to the presence of spermatozoa—an opinion which Professor Wolf of Bonn had earlier expressed. Most English writers have objected to this view, without, however, advancing any proof. Gallois was the first who showed that spermatozoa contain no oxalate of lime, and hence that the latter could not appear as the result of their decomposition—the view of Wolf and Donné. 2. What is styled “Meckel’sche Substitutions theorie.” Meckel of Hemsbach conceives a catarrh to be the origin of all calculus formations in the bladder. A ferment is formed; acid fermentation ensues; oxalic acid is the result, and that unites with lime. All urinary concretions, therefore, are originally composed of oxalate of lime, though they may ultimately consist of urates and phosphates.

VII. *Pathological Researches.*

[This is perhaps the most valuable portion of Dr Smoler’s work. He himself calls it the essence (kern) of his observations. It is, however, lengthy; and in the conclusions, together with the tables which we shall give in full, all the chief particulars are elicited. We therefore omit any further analysis of it.]

VIII. *Mental Anxiety and Oxaluria.*

As illustrative of the deep anxiety and distress of mind, more particularly of the dread of some impending serious malady, which so many observers have noticed in connexion with Oxaluria, Dr Smoler gives the two following instances:—1. A woman has suffered for years from a violent sciatica, bearing the pain with great fortitude. Sometimes she is put out of temper, and her mental state, ordinarily serene, is changed, she weeps without giving any reason

for doing so. On examining the urine on these occasions, I have constantly found a deposit of oxalate of lime. When the mental distress vanishes, the oxalate also vanishes from the urine. 2. A young man, whose father died of carcinoma of the stomach, embraced the notion that he was to die of the same disease, while the agony his father endured caused him greatly to dread it. This feeling he did all he could to get the better of, and succeeded pretty well; but from time to time the distressing thoughts returned, his mind became depressed, and he was rendered unfit for any occupation. The urine, which had been quite normal, at these times contained a more or less decided sediment of oxalate of lime.

IX. *Conclusions arrived at.*

It seems proper to offer a short summary of the foregoing observations, as bearing on Pathology, Diagnosis, and Prognosis.

1. The appearance of oxalate of lime in the urine and in urinary calculi was first noticed by Brugnatelli; Scudamore demonstrated its existence chemically; and, much later, Golding Bird recognised its microscopical character.

2. Brande, in 1808, conjectured that the presence of oxalate of lime in the urine was associated with certain disturbances in the system,—a view subsequently adopted by Golding Bird and Prout, who based their own descriptions of Oxaluria as a disease on the symptomatology of Brande.

3. The presence of oxalate of lime in the urine was in the first instance supposed to be very rare; but, after Golding Bird had shown how it might be readily recognised, observers became convinced of the frequency of its occurrence.

4. Oxalate of lime is exceedingly wide-spread in nature.

5. In the human body only oxalate of lime has hitherto been demonstrated. The authentication of oxalic acid in the blood (Garrod), and of oxalate of ammonia in the urine (Ratier, Devergie, Bécclard), has not been established with such certainty as to admit of no dispute.

6. The most frequent form in which oxalate of lime is found in the urine is that of the quadratic octohedra. Besides this, however, the following forms have been observed: the so-called dumb-bell (Golding Bird) or hour-glass form of crystals; the kidney (Begbie) or blood-corpuscle form (Bence Jones); lastly, the form described by Beneke, very rarely occurring, of quadratic prisms with pyramidal surfaces. The first and fourth, as also the second and third, naturally fall into one group or category.

7. Oxalate of lime is most readily recognised by the microscope. Its chemical demonstration is more difficult, requires more time, and can scarcely be accomplished with the same certainty, except by means of complicated methods.

8. The oxalate of lime was always considered a morbid indication. Bence Jones was among the earliest to affirm that no importance was to be attached to its presence, and that there are no particular symptoms connected with it; next to him, Owen Rees; while, on the other hand, Rose in a distinct manner showed, that after the use of food rich in oxalic acid, a sediment of oxalate of lime may occur in the urine. Magendie clearly pointed out the perniciousness of the long-continued use of food containing much oxalic acid.

9. After proof was adduced that a sediment of oxalate of lime may occur in the urine, independently of serious disturbance of the system, the existence of Oxaluria as a disease *per se* was assailed. The labours of Bence Jones, Owen Rees, Walshe, MacLagan, were especially decisive on this point. Over and above them, Begbie, then Gallois and Rose, and particularly Beneke, are to be named.

10. Oxaluria as an independent disease cannot, therefore—as is exhibited in the historical and pathological chapters of this work—be recognised; it cannot lay claim to the dignity of an independent affection; it has as little right to such consideration as the nervosismus of Bouchut, to which it has much analogy.

11. If, however, the recognition of Oxaluria as an independent disease, after

the manner of Prout, Golding Bird, Willis, Brett, Frick, Gray, Begbie, Mac-lagan, Küchenmeister, appears untenable, it cannot be denied that there are certain diseases, in the urine of which oxalate of lime is found sometimes frequently (Walshe, Balman, Mac-lagan, Gallois, Beneke), sometimes constantly (Beneke, Gallois, Lehmann); as also, on the other hand, there are certain diseases in which the oxalate of lime is absent (Newvann, Beneke). It can, therefore, in some cases be used as an aid in diagnosis; and herein especially consists the importance of understanding the oxalate of lime in the urine. It is interesting to know that the practical Americans were the first who vindicated its value. Next to the short notices furnished by them, Beneke has in this respect the highest merit.

12. In individual cases, the presence or absence of oxalate of lime attains a prognostic importance.

13. The frequency of the existence of oxalate of lime in the urine is very differently stated. Walshe found it 28.5; Gallois, 36 per cent. Baron, among 909 patients whom he examined, found 380 with oxalate of lime, or 41.47 per cent. Lastly, among 400 whom I examined, such a sediment was detected in 229, or 57.25 per cent.

14. These differences are only apparent. The per-centage affords great variety, where cases are considered in which oxalate of lime never or constantly occurs in the urine.

15. These given per-centages are in general, for this reason, without special value. They would become valuable if the per-centage was calculated for particular diseases.

16. The high per-centage of my examination, in comparison with that of other authors on this subject, is explained by the circumstance that I had 120 patients with mental diseases under examination. Very many, moreover, had diseases of the respiratory and digestive organs, in the urine of which oxalate of lime seldom fails to appear. The third cause, lastly, lies in the circumstance that they were mostly chronic cases in which the urine was examined for oxalate of lime. But in chronic diseases sediments of oxalate of lime frequently occur, as Mac-lagan knew, when he stated that "in chronic cases the entire absence of oxalate is the exception, not the rule."

17. The diseases in which oxalate of lime appears frequently or constantly in the urine may be placed in two groups—those with disturbed respiration, and those with disturbed digestion.

18. A third group may contain those conditions which are considered as anæmic or chlorotic, as convalescence after severe illness, frequent pregnancies, protracted lactation, spermatorrhœa, excess in venereal indulgence. But all these conditions are to be referred, on the one hand, to the blood altered in its normal ingredients, and, accordingly, not properly maintaining the respiratory function,—on the other, to the muscular weakness resulting from the blood altered in quality and quantity, and thus inducing a feeble respiration; therefore they represent a disturbance of respiration, and accordingly fall into the first group together. The disease produced by malaria is here also included.

19. So do diseases of the brain and nerves belong to the first group. They only lead to Oxaluria when inducing a checking or depression of the respiration.

20. But to neither of these groups do diseases of the mind belong. Each special case demands a separate consideration. Some fall into the first, some into the second group. Still, particular cases will remain, which, like many others, unable to be referred to definite diseases (as each case must have a special consideration), will not fall into either of these two groups. For these, then, the establishment of a third group—which, however, presents a union of both the others—appears proper. This may be called a mixed or complex group.

21. All diseases in which sediments of oxalate of lime appear in the urine are to be included, then, under one or other of these three groups: 1. Lesions of respiration; 2. Lesions of digestion; 3. Impairment of both these processes.

22. The supposition of a special alienation or perversion of the nervous

system (Golding Bird), under the influence of which an excretion of the oxalate of lime is said to take place, seems, therefore, not absolutely necessary to explain the condition in question.

23. It cannot, however, be denied that, under peculiar circumstances, a great depression of spirits frequently goes hand in hand with a deposit of oxalate of lime in the urine. In individual cases of this kind, the connecting link is scarcely to be overlooked, and one finds it readily in one of the groups mentioned under 21; but in other examples this connecting link is beyond our cognizance. Were the physical depression the first—which is not proved, and scarcely can be proved—and the occurrence of a sediment of oxalate of lime the second link, then these cases might easily be admitted into the first group; for it is acknowledged that deep mental affections, especially of a negative kind, such as melancholy passions, go along with an interruption or depression of the respiratory process. But this is not always the case; frequently enough it clearly appears that the oxalate of lime occurred first, and the depression of spirits secondarily. The above explanation cannot, therefore, admit of a universal application.

24. Hitherto the theories of Oxaluria satisfactorily explain the appearance of oxalate of lime in cases of the first and third group, but they leave us almost entirely in the dark in respect to cases of the second group, or, like Prout's and Beneke's modified theory, they are not proved.

25. But, in addition to the above division into three groups (21), another presents itself to us, which is of great practical value, though for the present we cannot judge of its scientific exactness.

26. According to this second division, we can separate diseases into—(A) those in which oxalate of lime can always be found in the urine; (B) those in which it is never found; (C) those in which it appears transiently, or under particular circumstances.

27. As examples of the first group A, may be named diseases of the lungs and stomach, violent apoplexies, chlorosis, intermittent fever, melancholia, diabetes (?); lastly, convalescence from severe diseases, and pregnancy. To the second group B, typhus in its early stages, acute rheumatism, quiescent tuberculosis, and certain stages in its course, intestinal catarrh, dysentery, pharyngitis, many skin diseases, according to Beneke commencing carcinoma (?). To the third group C, puerperal conditions, Bright's disease, diseases of the heart, diseases of the liver, epilepsy, various paroxysmal nervous diseases, paralysis with mental weakness, perhaps diabetes; lastly, the use of food rich in oxalic acid, of sparkling wines, of strong beer, as well as the medicinal use of oxalic acid and its compounds. In the last four cases the presence of oxalate of lime in the urine is only temporary, and of no pathological importance.

28. In the way of diagnosis, the appearance of sediments of oxalate of lime may be useful,—*a.* for the differential diagnosis between typhus and intermittent fever;—*b.* between typhus and acute miliary tuberculosis; *c.* to the determination of overlooked nocturnal attacks of epilepsy (of great importance in legal medicine); *d.* to determine whether irregular attacks of shivering are connected with irregular ague, or are dependent on tuberculosis (?);—if the presence of oxalate of lime in the first, and its absence in the second case, should be confirmed, this might under certain circumstances be of importance;—*e.* for the recognition of commencing tuberculosis;—*f.* for the determination of pregnancy.

29. The importance of oxalate of lime in prognosis is greater. It is valuable,—*a.* in pneumonia, in relation to its duration, partly to the violence of the process, and the resulting danger to the life of the patient;—*b.* in the instance of melancholic patients, a diminution or disappearance of the oxalate of lime in the urine is for the most part a sign of approaching recovery;—*c.* in mania, the disappearance of oxalate of lime from the urine, as a rule, indicates the approach of a stage of greater tranquillity: it would be valuable to determine whether the maniacal state does not precede the appearance of oxalate of lime in the urine;—*d.* in apoplexy, the manifestation of oxalate of lime may sometimes suggest the commencement of a pneumonia;

—*e.* in pleuritic effusions, the constant presence of oxalate of lime may cause an apprehension of the occurrence of tuberculosis;—*f.* in carcinoma of the stomach, a striking increase of the oxalate of lime sediment is characteristic of commencing ulceration;—*g.* in certain conditions represented by emaciation, loss of strength, irritability of temper, peripheric pains, etc., the appearance of oxalate of lime in the urine, if it cannot be referred to a simultaneous anæmia, may excite fear as to the development of tuberculosis;—*h.* in instances of feigned disease, the absence of oxalate may confirm the suspicion (for example, where hemicrania, pain in the stomach, and pains in the joints, etc., are stated to exist).

30. These few propositions might be much more extended; they are, however, for the present, sufficient to place in a clear light the importance of oxalate of lime in the urine, and to encourage to further researches.

31. The treatment of this condition is not specific, but depends upon the general affection;—in special cases, however, some of the approved empirical remedies may be employed.

A table of the cases submitted to examination may serve for a conclusion. In all, 400 patients (209 men, 191 women) came under examination; in 229 of whom the urine either constantly or temporarily contained oxalate of lime; that is, in 121 men and 108 women.

Diagnosis.				Oxalate of Lime in the Urine.		
	Male.	Female.	Total.	Male.	Female.	Total.
1. Diseases of the Brain and Nerves	13	17	30	8	13	21
2. Diseases of the Lungs and Heart	49	36	85	40	27	67
3. Diseases of the Digestive Organs	29	25	54	12	14	26
4. Diseases of the Kidneys and } Sexual Organs	10	6	16	7	4	11
5. Diseases of the Bones and Joints	4	2	6	1	2	3
6. Diseases of the Skin	6	2	8	3	—	3
7. General Affections	33	48	81	17	24	41
8. Mental Diseases	65	55	120	33	24	57
Total	209	191	400	121	108	229

TABLE EXHIBITING THE SPECIAL DIAGNOSIS:—

				Oxalate of Lime in the Urine.		
	Male.	Female.	Total.	Male.	Female.	Total.
1. Cerebral Hæmorrhage	3	5	8	2	1	3
Alcoholismus chronicus	3	—	3	1	—	1
Epilepsy	—	2	2	—	2	2
Hysteria	—	6	6	—	6	6
Chorea	2	1	3	2	1	3
Paralysis Agitans	1	—	1	1	—	1
Chronic Hydrocephalus	1	—	1	1	—	1
Sciatica	—	1	1	—	1	1
Hemicrania	—	1	1	—	1	1
Facial Palsy	3	1	4	1	1	2
Total	13	17	30	8	13	21
2. Pulmonary and Bronchial Catarrh	3	3	6	3	3	6
Pneumonia	8	11	19	7	7	14
Emphysema of Lungs	5	1	6	5	1	6
Tuberculosis of Lungs	17	10	27	11	8	19
Pleuritis, with effusion	6	4	10	4	2	6
Pericarditis	1	—	1	1	0	1
Contraction of the Mitral Orifice	6	6	12	6	5	11
Insufficiency of Aortic Valves	3	1	4	3	—	3
Total	49	36	85	40	27	66

THE SPECIAL DIAGNOSIS—*continued*.

	Male. Female. Total.			Oxalate of Lime in the Urine.		
	Male.	Female.	Total.	Male.	Female.	Total.
3. Gastric Catarrh	4	2	6	2	1	3
Cardialgia	—	1	1	—	1	1
Perforating Ulcer of Stomach	1	—	1	1	—	1
Cancer of Stomach	4	3	7	4	3	7
Intestinal Catarrh	4	1	5	—	—	—
Jaundice	4	5	9	2	2	4
Atrophy of Liver	3	3	6	3	3	6
Cancer of Liver	—	1	1	—	1	1
Dysentery	4	—	4	—	—	—
Peritonitis	1	5	6	—	2	2
Pharyngitis	4	5	8	—	1	1
Total	29	25	54	13	14	26
4. Bright's Disease	6	2	8	3	1	4
Diabetes	1	2	3	1	2	3
Spermatorrhœa	3	—	3	3	—	3
Polypus Uteri	—	1	1	—	1	1
Perimetritis	—	1	1	—	—	—
Total	10	6	16	7	4	11
5. Erysipelas	2	1	3	1	—	1
Lupus	—	1	1	—	—	—
Eczema	1	—	1	1	—	1
Erythema	1	—	1	—	—	—
Urticaria	1	—	1	1	—	1
Scabies	1	—	1	—	—	—
Total	6	2	8	3	—	3
6. Arthritis Multipla	2	1	3	—	1	1
Tubercular caries of Vertebrae	1	1	2	1	1	2
Ostitis	1	—	1	—	—	—
Total	4	2	6	1	2	3
7. Chlorosis, Anæmia	1	8	9	1	6	7
Ague	18	14	32	14	8	22
Typhus	10	10	20	—	—	—
Puerperal Fever	—	12	12	—	6	6
Scorbutus	4	—	4	2	—	2
Pregnancy	—	4	4	—	4	4
Total	33	48	81	17	24	41
8. Melancholia	15	15	30	12	9	21
Mania	15	15	30	10	10	20
Epilepsy, with Mental Derangement	5	5	10	5	5	10
Imbecility	20	20	40	—	—	—
Paralysis, with Imbecility	10	—	10	6	—	6
Total	65	55	120	33	24	57

Vierteljahrschrift für die Praktische Heilkunde, Prag.

[In closing our account of Dr Smoler's interesting and valuable researches, we must acknowledge that he has failed to convince us of the incorrectness of the opinion entertained by the late Drs Prout and Golding Bird. Like them

we still believe that there exists a special form of disease characterized by remarkable dyspeptic and nervous symptoms, with which oxalate of lime in the urine is invariably associated. A morbid condition that is, moreover, unlike any other with which we are acquainted; and the recognition of it we hold to be of the very highest conceivable consequence, for if neglected, or unskilfully treated, functional derangement may either pass into serious organic disease, or the mental depression, so constant in its recurrence, may assume a still more formidable character. By careful restriction in diet, and the employment of the remedies originally suggested by Dr Prout (or, better still, the mixture of the strong nitric and muriatic acids suggested by Dr Bird), there are, happily, very few instances of oxaluria which will not speedily be greatly benefited, and ultimately restored to health.]

Part Fourth.

MEDICAL NEWS.

LETTER FROM PARIS.

(BY AN EDINBURGH GRADUATE.)

Paris, 6th January 1862.

I HAVE been here for more than two months, studying under the medical and surgical professors, and I propose sending you now and then a few gossiping notes on what is going on in the medical circles of the French metropolis. First of all, let me say a little about some of the professors, etc.

The School of Medicine contains only a single amphitheatre, which is well appointed; but it is very inconvenient, as one professor steps into it to lecture just as the other walks out. The consequence is, that by four o'clock the atmosphere is very impure; and, moreover, numbers of students come dropping in ten and five minutes before the end of one lecture, in order to secure good seats for the next hour. Professors Denonvilliers and Malgaigne lecture at four o'clock on alternate days, and Saturday is not a *dies non*, as with us in Edinburgh, but the lectures go on as usual. Denonvilliers lectures on surgical pathology, and speaks pretty distinctly, but his hour is rather tedious. Malgaigne speaks on surgical operations and appliances. He is rather a little man, with thin sharp features, and appears to be a great favourite with the students. His style is not unlike Professor Bennett's, but is more animated. He is one of the first surgical writers in France: his work on Dislocations and Fractures being unsurpassed; and although he is not celebrated as an operator, owing to extreme nervousness, yet he has made a great many practical improvements in surgery. Indeed he is probably the most learned surgeon in France.

The professors in Paris are appointed by government; they receive salaries of 10,000 francs per annum, and have no fees. During their absence or illness, their place in the lecture-room or the examining-board is taken by a *professeur agrégé*, who is appointed for a term of seven years, and receives a salary of 2000 francs. He may probably himself get a professorship a dozen years after his term as *professeur agrégé* has expired, as promotion goes on but slowly. Tardieu, who was *professeur agrégé* some years ago, has just been appointed to the vacant chair of Legal Medicine. The students merely pay inscription and examination fees, and their medical curriculum costs only about £60. They require to take the degree of Bachelor of Sciences

before they can enter the medical classes. Dissections and operative surgery are performed at the Anatomical School at Clamart, and the École Pratique, and about 4000 bodies are dissected every year between the two places.

The hospitals are widely scattered over the city, some being near the School of Medicine, others two or three miles distant from it. The Hôpital des Cliniques de la Faculté de Médecine is just opposite to the School. It is devoted to obstetrical and to surgical cases, the former being under the charge of Pujot, who succeeded Baron Dubois; and the latter under the charge of Nélaton. It is said that ground is to be bought beside La Charité, to build an addition upon it for the purpose of removing Nélaton's patients thither, owing to the great amount of erysipelas amongst his patients, which is caused by the contamination of the atmosphere by the effluvia of the obstetric wards. The wards are long and very narrow; most of them have beds on only one side. They are generally ill kept, and are far from being well ventilated. The beds are all surrounded with white curtains, which give them a very pleasant, comfortable appearance, but seem to me to be of very questionable utility, according to British notions on the subject. The floors generally consist either of long narrow planks of hard wood, or of a kind of composite material, but in either case are kept in such a highly polished condition as to necessitate your taking considerable precaution in making rapid progress across them. The hospital staff consists of the Professor, a Chef de Clinique (generally an M.D. in practice), who has charge of the hospital staff under the Professor; one or more *internes*, who are equivalent to our house-surgeons and physicians, but, unlike them, are only senior students, and cannot hold the post after graduation; they are appointed by annual competition, and receive a small salary; and, finally, a large number of junior students, corresponding to our dressers and clerks, who are termed *externes*. The attendance is done principally by sisters of charity, who, by the peculiarity of their garb, are rendered anything but attractive.

As a surgical dressing, in cases where we would use lint, soaked in water, the French surgeons pile on an immense quantity of charpie, dipped in glycerine. Fractures are generally put up in *plaster of Paris* splints. These consist of broad bandages, folded longitudinally so as to make them two or three plies thick, and steeped in *plaster of Paris*. They are then applied to the fractured limb, and carried round to the sole of the foot, along the dorsum, etc., and the limb is held in position until they become dry, which takes place very quickly: four of these are usually applied, one in front, one behind, and one on each side; they thus form a series of splints, which fit exactly to the shape of the limb. Maisonneuve, of whom I shall hereafter speak, seems to be the principal one who employs these splints.

In the meantime, I have wandered from the Hôpital des Cliniques, in connexion with which I mentioned Nélaton. Nélaton is the surgeon there: he is about the ordinary size, with a round bullet head, and short iron grey hair, but without any hirsute appendages on the face, which is slightly marked with the small-pox. He is a pleasant-looking man, and speaks very distinctly. He has the largest income of any medical man in Paris, as he is believed to make about 250,000 francs per annum, which comes pretty near Ricord, who in his zenith is said to have made 300,000 francs. I can get very little good from his wards, as they are so narrow and the beds so crowded, that it is impossible to see more than every third or fourth bed, on account of the crush of students who follow him. French students not being over polite in the wards, whatever they may be elsewhere, they all crowd round the bed, and poke their noses right into the patient, so that unless you happen to be right in the front rank, you see nothing. However, Nélaton's lectures are very good, and he has a great number of operations. I saw him reduce a dislocation of the shoulder of thirty days' standing, with an apparatus which regulated, or rather indicated the amount of force used. It consisted of laques, pulleys, etc., as usual, but the ropes at each end were attached to an elliptiform steel spring. When force was applied, the two sides of the ellipse were approximated, and caused

a needle on a brass plate attached to one side to move along the surface of the said plate, thus indicating in kilogrammes the amount of force used. He tried first 150 kilogrammes, but this not being sufficient, he increased the force to 180 kilogrammes, and succeeded in reducing the dislocation. The arm afterwards remained helpless, from the paralysis produced, not by the operation I think, but by the previous pressure on the nerves. Galvanism was applied, and I suppose the patient will recover. I saw the operation for strangulated hernia performed by Nélaton yesterday, in a case of inguinal hernia of thirty years' standing, and of three days' strangulation. Nélaton cut right down to the sac by degrees, without using forceps or cutting with the knife horizontally, as is usually done. Having cut into the sac in this style, and exposed the intestine, he introduced his finger and opened the sac to a sufficient extent, and then introduced a curved knife with a concealed blade, and cut the constriction.

The Hôtel Dieu consists of three parts: one placed south of the Seine, and connected by a covered bridgeway with a part on the north side, and this latter again connected with a third part on the other side of the street by a subterranean passage. The only man I know here is Trousseau, except Maisonneuve, by the way, who has just been removed hither. Trousseau possesses a most gentlemanly appearance; he is rather pompous in his manner, but a very fine lecturer; he has been speaking for some time on Pyæmia. I do not know much of his practice yet, but there is one point I may mention, viz. his use of heated sand in rheumatism, which he pours upon the affected joints, and thereby gives surprising relief to the patient's sufferings.

At La Charité are Velpeau, Piorry, and Malgaigne. I speak only of the men I know. There are others at La Charité besides these. Velpeau is tall and spare in figure, with large heavy white eyebrows—not over pleasing in appearance. He allows a very improper degree of familiarity between the students and himself, and, in fact, encourages it by cracking coarse jokes with the students and patients. Of course, there is an immense rush after him. He is very successful in the use of iodine injections. A friend of mine has seen five cases of ovarian dropsy treated by the iodine injection, with only one death out of the five. Velpeau injects knee-joints, chronic abscesses, and indeed all cavities nearly which are lined with a serous membrane. In the case of the knee-joint he first uses cantharides plaster, and if this fails, he then tries the iodine injection, and is very successful, I believe. Piorry is a large strongly-built man, with black hair, and large black whiskers. He is not a distinct speaker, though fluent enough.

Chaussaignac, the inventor of the *écraseur*, is one of the surgeons at Lariboisière, which is considered a model hospital in construction. Chaussaignac uses the *écraseur* for amputations, cutting fistulæ, removing hæmorrhoids, cutting out cancer from the tongue, and, indeed, for almost everything where a knife is used: he certainly gets through his operations with the loss of very little blood. He has a very ingenious instrument for the removal of enlarged tonsils. I do not know the exact construction, but it appears to consist of two principal parts: first, the stalk or handle, terminating in a ring or circle; and, secondly, two small blades extending across the space of the circle. The circle is applied to the tonsil, and a spring in the handle is pressed, whereby the blades immediately transfix and excise the offending tonsil, without the possibility of injuring the carotid or any other part. One can be applied to each tonsil, and both used simultaneously—a point of considerable value in children, as both tonsils can be removed so promptly that the little things scarcely know what is doing till the operation is over.

I have also seen old Civiale, the eminent lithotritist, at the Neckar. He is a nice, jolly, easy, goodnatured-looking old fellow. I have seen him crushing several stones. It seemed to be done just in the usual manner, and with comparatively little pain to the patient, into whose hand Civiale generally places the debris of the stone, the poor fellow apparently receiving it with intense satisfaction and delight.

I followed Maisonneuve's visits at La Pitié, so as to supplement Nélaton's surgery, as he used to have a large number of beds, every one of which I could see; and what rendered it more interesting was, that he did everything himself. He has just been removed to the Hôtel Dieu, and I am not yet certain if his visits there will suit my arrangements. I should be sorry if they did not, as I see more surgery with him than with any other person. He is a rather short and stout bustling man, of not over-prepossessing exterior. He is, however, a very enterprising and ingenious individual,—decidedly a bold surgeon, who evidently looks upon his patients as subjects given him for experimenting upon. Amongst other instruments he has invented, is one for tracheotomy, and which consists simply of a semicircular blade, attached to a straight handle. The point is entered into the trachea at the proper site, and by depressing, the handle is again brought out; you then simply cut out, and have your opening made,—the instrument, doubtless, will perform its work promptly enough, but I think with doubtful safety. Maisonneuve uses largely the *fêche* or caustic arrow for removing masses of cancer, etc. He had a patient the other day, a young woman, with rupture of the perinæum, upon whom he had performed the ordinary operation, of paring the edges of the wound and bringing them together, without success; so he next cut out a little tongue of flesh from each side of the perinæum, and then bringing first one flap down, and laying it across the perinæum transversely, and then bringing down the second flap upon it, and uniting the two by sutures, thus formed a sort of bridge. The last time I saw her she was doing very well, and Maisonneuve told her, if she only kept her legs together she would have her *pucelage* again. Another remarkable case of his, was a young man with Pott's curvature of the spine, which caused pressure on the cord. Maisonneuve operated upon him by removing the spines and laminae of the vertebrae at the point of curvature, and thereby straightened the spine again; but, as might be expected, inflammation of the cord came on, with complete paralysis, and of course the poor fellow *died*.

I have frequently seen Duchesne, the eminent authority on electricity, and its application to paralysis. He comes very regularly to Trousseau's lectures; and he holds weekly conferences, to which he invites foreign medical men, and shows them a variety of experiments illustrative of his views.

Marion Sims, the New York surgeon, was here lately, and performed several operations before a large number of the profession, but unfortunately I did not see him.

They seem to have a most unnecessary dread of chloroform here. I have not, since I came to Paris, seen a patient so completely under the influence of chloroform as one sees daily in Edinburgh. They give a little chloroform before beginning the operation, but remove it before the patient is in the first stage of anæsthesia. So, generally, the surgeon is disturbed, and strangers like myself are shocked by the cries of the patient, whose sufferings might so easily have been averted by a little more of the chloroform.

Next month, I hope to be able to give you some news about various matters of professional interest. Meanwhile I must end these rambling remarks.

W. T.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLI., 1861-2. MEETING III.

Wednesday, 8th January 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

The President, on taking the chair for the first time, delivered the following introductory address:—Gentlemen, I have to express my warmest thanks for the honour you have conferred upon me in electing me as your President; and as I feel that I owe that honour more to your kindness than to my own quali-

fications for the office, I feel all the more bound to exert myself to the utmost to discharge aright the duties which devolve upon me, and to try and promote in every way the interests of the Society.

I have no intention of requiring your kindness by inflicting on you a formal inaugural address at this time, but shall confine my remarks to a few suggestions as to how we may best promote the objects which, as a Society, we have in view. These objects are the accumulation and diffusion of professional information, so as to advance medical science, to promote the interests of our common profession, and to benefit suffering humanity. Our constitution as a Society implies mutual co-operation for these purposes. Every member, as he has voluntarily joined our association, is morally bound, according to his abilities and opportunities, to do what he can for this common end, either by furnishing communications, taking part in our discussions, or at least, by his presence at our meetings, showing that he feels an interest in our proceedings.

Looking to what has already been effected, I think we may say, without presumption, that this Society has done important service to medical science and to the medical profession, and conferred no small benefits on the community. But when I reflect on the machinery and resources which, as a Society, we possess for advancing medical science, and applying it practically in various ways, I do not hesitate to say that if all the agencies we possess were energetically employed in their proper spheres, much greater results might be anticipated and accomplished, and a more general interest taken in our operations.

The agencies and resources I refer to are our members. We have on the roll of this Society the names of all those connected with our Medical School and our hospitals. We count amongst our members a very large proportion of the medical practitioners of this city, and many, we should be happy to have more, of our professional brethren practising in different districts of the country. In regard to the working of this machinery, I wish to speak frankly, for I think a certain amount of error here has prevented us obtaining all the good we might expect. I have heard it frequently said that this Society must depend for its communications and supply of interesting material principally on those members connected with our hospitals and Medical School. This is doubtless a most important source, and one to which we must always look for support. It has never yet failed us, and I do not fear it failing. The danger rather seems to me to be, that from the resources and activity of this section of our members, it may come to be trusted to so exclusively, that others may perhaps think it unnecessary for them to take any share in the work. Whilst, therefore, I would still expect those connected with our hospitals and schools to furnish us with a large share of contributions, I would specially urge upon the other sections of our Society taking their share of the work. They can scarcely plead want of material, for when we consider the number of experienced medical men in this city actively engaged in the practice of their profession, and the daily observation of disease, it can scarcely be but that cases and facts of great value must frequently come under their notice, which, if properly used, would have most important bearings on the advancement and consolidation of our medical knowledge. I do not so much allude here to extraordinary, isolated cases, which, though valuable, and worthy of note as exceptions, may sometimes be liable to give currency to ill-formed opinions, but rather to the collating and grouping together of cases of similar characters, and, whilst noting their individual peculiarities, specially observing their great common features, and then drawing practical deductions from such data as to their pathology and treatment. The remarks elicited by such communications would naturally bring out the experience of others in regard to cases of the same class, and thus a large amount of information, the result of the experience of different persons, would be obtained; and this seems to me a kind of work specially the function of such a Society as this. Then, as regards our country members, besides the kind of information I have just alluded to, there are specialties in their case which would render their communications peculiarly valuable, as corrective to some extent of observations derived entirely

from hospital and city practice. For, whilst it is true that a variety of circumstances in the march of civilisation have done much to modify climate, and to assimilate the habits and diet of the people throughout the country, these influences have not yet reduced town and country to a dead level. The types of disease, the prevalence of certain diseases in particular districts, and the statistics of the results of surgical cases compared with those of towns, furnish ample materials for their special observation. And those of us who come most in contact with our professional brethren in the country, know that they are well fitted for the work. I do not forget the arduous nature of their professional duties, and the amount of physical labour, and consequent fatigue, which these entail, as apparently valid excuses, if they wish to plead them, why they might be exempted from such tasks as I propose; but it seems to me that in their case, as in most others, the very difficulties under which they labour produce compensating advantages. Thus the very necessities of their practice train them to habits of concentration of thought and decision and promptitude in action. Nay, the very distances they have to traverse in passing from one patient to another are favourable to reflection on and consideration of the cases they are treating; for, however fast the doctor may ride, thought is fleetier still, and if the case he has visited, or is about to visit, be one of interest, depend upon it his thoughts are busied with it. For these reasons, as I know their contributions and their presence at our meetings would be welcomed by us, and as I believe they would confer benefit on practical medicine, I hope some of them will respond to the hints I have ventured to throw out.

Having thus urged upon all sections of our membership the propriety of taking part in our proceedings, I cannot avoid noticing a subject which has sometimes been stated to be an obstacle to many of our members giving us the benefit of their experience. I allude to our discussions. It has been said that many who would otherwise favour us with communications of a practical kind, not being accustomed to speak, do not choose to have their contributions form the subject of a debate. Now it is quite obvious, that if a Society such as this is to do real good, it must be not merely by amassing a number of statements in reference to medicine and surgery, but by eliciting truth, and selecting what is really valuable; and this can only be done by submitting the materials presented to the sifting process of a fair criticism. The Society, indeed, does not hold itself responsible for the opinions advanced in the communications brought before it, and therefore pronounces no opinion in its corporate capacity; but then the opinions expressed by those who criticise or take part in the remarks on communications are all-important, in either establishing the views adduced, or else in detecting and correcting erroneous deductions or doctrine. On the other hand, most assuredly there should be nothing of mere idle declamation. Our discussion should be of that calm and grave character, and our criticism in that friendly spirit, which becomes men who feel the difficulties and responsibilities of such a calling as ours, and who profess to be seeking truth for its own sake, and not their own personal exaltation.

I know it is difficult to draw the line between discussion and debate, and that statements made and supported with vehemence are apt to evoke a similar spirit in reply. But this should not be, for in general the violence in discussion is in the inverse ratio to the value of the argument and the knowledge of the subject, and we are more likely to be effective by disregarding all irrelevant observations, by narrowing the question at issue to its proper limits, and by speaking directly to the points in question.

But, though I have felt bound to allude to these things, I also feel bound to say that much which has been said on this subject has arisen from exceptional occasions, when papers specially intended to evoke discussion, and to ascertain the differences of opinion existing on certain disputed points, were formally brought before the Society, and when all who took a share in the debates were quite able to take their own part. My own experience of the Society for the last one-and-twenty years does not lead me to the conclusion that declamatory debate is the normal character of our discussions; and I think I may assure

any members who have practical observations to bring before us, that they will meet with a courteous hearing, no captious criticism, and that the Society does not estimate the value of an argument by the "much speaking."

Mr Spence concluded by directing attention to two modifications which it was proposed to introduce into the working of the Society. The first was, that in future members would be requested to co-operate in furnishing information regarding the state of disease in Edinburgh, and especially of epidemic disease; and from the information so obtained, reports or statistical returns would be occasionally drawn up, which could not fail to be both interesting and instructive. The second was not an innovation, but a return to a system formerly existing. It was that, as a general rule, pathological specimens should not be exhibited at the ordinary meetings of the Society, but at meetings to be specially summoned for the purpose. It had been found that when, as often happened, many specimens were exhibited, the time to be devoted to the paper or papers of the evening was very seriously trenchanted upon; but, by holding special meetings, there would be time for a more careful examination of interesting preparations, and members would have an opportunity of expressing their opinions regarding them. It was not intended to make this rule absolute, but only to apply it in the case of such preparations as could be kept for some time; so that if any member met with a morbid specimen, which would not keep till a pathological meeting, there would be no objections to his exhibiting it at the first opportunity.

I. CASE OF POISONING BY SULPHURIC ACID.

Dr Haldane exhibited the œsophagus, stomach, and portions of the intestines of an individual who had committed suicide by swallowing sulphuric acid.

(This case will be found at page 739 of the present Number of this Journal.)

II. SMALL ANEURISM OF THE AORTA, WHICH PRESSED ON THE TRACHEA AND GAVE RISE TO SYMPTOMS SIMULATING LARYNGITIS.

Dr Haldane stated that the subject of the present observation was a woman, thirty-five years of age, who had been first admitted into the Royal Infirmary, under the care of *Dr Sanders*, on the 19th November 1861. At this time she was suffering from symptoms of bronchitis, and was also subject to attacks of spasmodic difficulty of breathing. There were marks of old ulceration of the soft palate, and the uvula was completely gone; from her history it was believed that the ulceration had been of a syphilitic character, but the patient could not be brought to confess that she had ever suffered from a venereal affection. *Dr Sanders* never saw the patient during an attack of dyspnoea, but one of them which was witnessed by his resident physician, *Dr Robertson*, was so severe, that tracheotomy was on the point of being performed. Under the application of hot poultices, and the constant inhalation of steam, the attack gradually yielded. For the first fortnight after admission the patient's voice was almost completely suppressed, but after that time she in great measure regained it. The bronchitis yielded to treatment, and the patient was dismissed on the 5th of December, not having had an attack of difficult breathing for some days previous.

She was readmitted on the evening of the 26th December in an apparently moribund condition, being on the very verge of suffocation. The face was livid, the eyes injected, the surface cold, the pulse small, and she was in an unconscious condition. The symptoms were so urgent that *Dr Robertson* at once performed tracheotomy. The relief afforded was immediate and complete, as the pulse rose, and the patient soon fell into a sound sleep. During the next five days, though the patient was free from spasmodic attacks of dyspnoea, it was remarked that the breathing was always rapid, never below 40 in a minute, and was accompanied by a "flapping sound," which was ascribed to the presence of mucus in the trachea. Symptoms of pneumonia supervened, and she died early on the morning of the first of January. On post-mortem examination, two small aneurisms of the aorta were discovered. One of these,

of the size of a small chestnut, arose from the lower wall of the vessel, just about the junction of the ascending and transverse portions of the arch; it lay above the pulmonary artery, but did not appear to have compressed that vessel. The second aneurism, not larger than a filbert, arose from the centre of the transverse portion of the arch, on its posterior aspect, and pressed upon the trachea about an inch above its bifurcation. The coats of this aneurism were very thin. When the trachea was laid open, the aneurism was found to have produced a slight bulging inwards, rather to the left side, in a space about half an inch in length, by which the calibre of the tube was slightly but decidedly diminished. Both of the aneurisms being of small size, and situated almost exactly in the mesial line, there was no interference with the pneumogastric or recurrent nerves. There was extensive semitransparent thickening and atheromatous degeneration of the whole of the thoracic aorta. The larynx was quite healthy; both it and the trachea were of unusually small size. There was red hepatization of the lower lobe of each lung.

Dr Haldane remarked, that this case was interesting both in a diagnostic and in a practical point of view. The presumed existence of a venereal taint, taken in connexion with the attacks of spasmodic dyspnoea, had naturally suggested the idea of syphilitic disease of the larynx. The voice, indeed, though suppressed at first, had not the character usually presented by it when the larynx is the seat of inflammation; and the fact of the respiration being only affected during the paroxysms, suggested the idea that the dyspnoea was occasioned by some excrecence or other source of irritation, which did not permanently diminish the capacity of the air-passages. From the small size of the aneurisms, and from their position, they were beyond the reach of direct physical examination; indeed, even at the dissection, their existence might readily enough have been overlooked. There was, however, one point, as suggested by Dr Gairdner, on which an exact diagnosis might perhaps have been founded; this was the circumstance of the trachea being pushed a little backwards. The case was further interesting, as showing how a very small tumour might give rise to most distressing and most urgent symptoms. The larger aneurism did not appear to have exerted injurious pressure on any of the adjoining organs; the swelling which occasioned all the suffering was no larger than a filbert. The spasmodic difficulty of breathing, which so often accompanied intrathoracic aneurisms, was most generally occasioned by irritation of some of the nervous trunks; in this case, however, it was due to pressure upon the trachea, closure of the glottis being produced as a reflex phenomenon. No doubt the diminution in the calibre of the trachea, slight as it was, must have interfered injuriously with the respiration (particularly as the air-tubes were decidedly below the usual size), and this circumstance explained the fact, that even after the operation the breathing remained somewhat embarrassed. The treatment adopted in this case was the only line of practice which could have given the patient a chance of life; at the time of the operation she was almost moribund; and although a fatal result ultimately occurred, no doubt the performance of tracheotomy had prolonged her life. In conclusion, Dr Haldane remarked that it was unusual to find such extensive arterial disease in a female, at such a comparatively early period of life.

III. CASE OF PERFORATING ULCER OF THE STOMACH.

Dr Grainger Stewart showed a stomach which was the seat of a simple or perforating ulcer. On Sunday last (the 5th January), Dr Stewart was sent for to see a woman, whom he found in a dying state. It appeared that the patient's health had always been good, that her appetite had been tolerable, and that she had never vomited. On the previous day she had been at her ordinary work, but about ten o'clock at night she complained of pain in the abdomen. The pain increased, and speedily became accompanied with swelling. When seen by Dr Stewart, she was pulseless, and there was pain and tender-

ness of the abdomen, with considerable tympanitic distension. She speedily sank.

On examination of the body, a simple ulcer of a circular form, about the size of a shilling, was found on the back wall of the stomach, close to the lesser curvature. This ulcer had perforated the coats of the stomach, part of the contents of which had escaped into the peritoneum. On the anterior wall of the stomach, opposite to the perforating ulcer, was a small abrasion of the mucous membrane, which appeared to be the commencement of another ulcer. It was interesting to observe, that though so short a time had elapsed between the occurrence of perforation and the death of the patient, nature had already attempted to close the opening, by gluing its edges to the lower margin of the left lobe of the liver. Dr Stewart observed that the most interesting feature in this case was the absence of vomiting or hæmatemesis; there had been, in fact, no symptom calculated to excite the suspicion of disease of the stomach, until perforation suddenly occurred.

IV. OLD DISLOCATION OF THE BONES OF THE FOREARM.

Dr P. H. Watson showed a specimen of old dislocation of the bones of the forearm, backwards and outwards. From the small size of the ends of the bones engaged in the articulation, it was evident that the injury must have been received during adolescence, and that no farther development had taken place since. The preparation showed well the changes which had occurred in the parts in the neighbourhood of the articulation. The brachialis anticus was pushed forwards by the lower end of the extremity of the humerus. The external trochlear surface of the humerus lay in contact with the tendon of the biceps. There was partial absorption of the cartilaginous surface of the extremities of the humerus, radius, and ulna, and in its place fibrous tissue united them to the surrounding parts; but where the extremity of the humerus moved upon the surface of the bones of the forearm, the cartilage remained intact. The external condyloid ridge of the humerus had undergone ossific development, presenting a surface which supported the head of the radius, and to which the annular ligament of the radius was firmly attached by a fibrous capsule surrounding the head of the bone, and within which it had free rotatory play. It was also worthy of remark, that there was a very tolerable power of flexion and extension.

V. RUPTURE OF A POPLITEAL ANEURISM.

Mr Edwards showed a ruptured popliteal aneurism. The subject of the observation, in an intoxicated condition, had reeled into Mr Edwards' consulting room, thrown himself down on a sofa, and exhibited a large pulsating swelling in the ham, which was evidently a popliteal aneurism. There was œdema of the foot, and as the patient lay the swelling visibly increased in size. Mr Edwards, taking into consideration the condition of the patient, would willingly have delayed interference, but as the foot was becoming cold, and as the œdema was increasing, he felt bound to operate. He accordingly tied the superficial femoral, but in doing so he thought he had committed a mistake; for, although the treatment under such circumstances is not laid down in surgical books, it would probably have been better to amputate at once. The man was attacked with delirium tremens; gangrene of the foot set in; the thigh was amputated high up, but the case had terminated fatally. Mr Edwards repeated that he believed he would have done better in amputating in the first instance.

VI. INDIAN METHOD OF FIXING LOOSE TEETH.

Dr Roberts remarked, that it was well known that the natives of India were in the habit of tying loose teeth to sound ones, by means of gold wire, arranged in the form of a figure of 8, and he had seen various preparations illustrative of this practice. He had never, however, seen so remarkable a preparation of the kind as the one which he now exhibited to the Society. It had been

removed from the mouth of a native queen, and sent home by a former pupil, now settled in Madras.

The preparation consisted of the whole of the teeth of the lower jaw, which had been removed in one piece, and were attached to one another by gold wire. Complete absorption of the alveolar processes had taken place, and the only points by which the teeth were connected to the jaw were the ends of the roots of the wisdom teeth. The roots of the central and lateral incisors were incrustated with tartar, and all the teeth were of a black colour, owing to the practice of chewing beetle-nut, and other preparations. The teeth of the upper jaw had all fallen out, although they had been tied together in the same way, and at the same time (eight or nine years ago) as the under teeth. A complete artificial set had been fitted in, and given much satisfaction.

Dr Roberts showed two smaller preparations of teeth attached together in a similar manner, which had been removed from the mouth of a native pleader.

Dr George Smith stated that the practice of attaching the teeth together was very common in Madras, and that he had frequently seen examples of the practice, but never on such a large scale as in the preparation shown by Dr Roberts. The natives were also in the habit of ornamenting their teeth with gold; they bored little holes in the central incisors, and filled them up with gold.

VII. ON ACUPRESSURE, ILLUSTRATED BY A SECOND CASE OF AMPUTATION BENEATH THE TROCHANTERS.

Dr Handyside read a paper on the above subject, which will be found at page 712 of the present Number of this Journal.

The President observed that the Society was much indebted to Dr Handyside for the communication he had laid before them. The more difference of opinion there was regarding the advantages of acupressure, the more necessary was it to bring forward cases so as to show what the advantages of the new method were, whether these advantages could be readily secured, and whether they were so great as to induce surgeons to give up other and older methods.

Mr Edwards observed that, when the subject of acupressure was last before the Society he had not expressed any opinion for or against it, but merely stated the result of his own experience, and this for two reasons; in the first place, the subject had been but a short time before the profession; and, in the second, he did not know at that time, and, in fact, he did not know now, what improvements it might ultimately be susceptible of. Since that time he had, however, had pretty numerous opportunities of testing it. He had tried it with long needles, and with short needles; from the inside, and from the outside. He might state frankly that, like almost all surgeons, he had always had a prejudice in favour of ligatures, but he had not on that account declined to try acupressure. That acupressure could be trusted to arrest arterial hæmorrhage there was now no doubt. When the needles were inserted from without inwards, they were open to the objection of sometimes leaving suppurating tracks. When allowed to remain in too long, they left little fistulous apertures, which made no great difference in the ultimate healing of the stump, but which spoiled its appearance for the time. To make sure that the needles were rightly applied, Mr Edwards had requested Professor Simpson to introduce them in several cases. In one where he had amputated the arm a little below the shoulder, Dr Simpson applied eight short needles with iron wires attached, one at the point where the axillary artery becomes the brachial, and seven others. The needles were removed in forty-eight hours, and the stump was completely healed in a week. There was no doubt but that other stumps sometimes healed as rapidly, still such a result was exceptional. Quite lately, Mr Edwards had employed acupressure in a case where he performed Pirogoff's operation, and in another where he had amputated below the knee. The stump in the latter case was very vascular, and accordingly was not stitched up immediately after the operation. A few hours afterwards bleeding occurred, and he opened the stump, expecting to find that some artery was not properly pressed upon by its

needle. But it was found that the needles were perfectly restraining the bleeding, and that the hæmorrhage was proceeding from a vessel which had not been noticed at the time of the operation. This observation had impressed him more strongly than any other, for here were such vessels as the tibial kept completely under control. In this case the man was out of bed in a week.

Dr P. H. Watson had listened with much pleasure to *Dr Handyside's* communication; but while he regarded it with much interest as a case of recovery under unfavourable circumstances, he did not think it had any direct bearing upon the question which formed its title; certainly amputation had been performed, and acupressure had been employed, but it did not appear that acupressure had had anything to do with the successful result. *Dr Watson* had hoped to hear some reasons for giving a preference to acupressure over the ligature, which had hitherto been thought so satisfactory; at first, numerous advantages had been claimed for it, but in this case it did not seem to have had any. Surgeons were taunted at first with not getting wounds healed by the first intention; but from the very nature of the wound in cases of amputation, and from the character of the tissues cut through, it was difficult to have union by the first intention. In fact, in a discussion which took place lately in the Academy of Surgery of Paris, a doubt had been expressed, as to whether complete union by the first intention after amputation ever took place. It had at first been said, that acupressure had the advantage over the ligature, that most stumps where it was employed would heal by the first intention; but *Dr Watson* would ask those who supported acupressure, to bring forward their results to prove that this statement was correct. In *Dr Handyside's* case, there had certainly not been healing by the first intention; and, on the whole, *Dr Watson* had heard nothing which would induce him to prefer acupressure to the ligature.

Dr Handyside remarked, that when ligatures were employed, there was always a risk of secondary hæmorrhage, but this, so far as he knew, had never occurred after acupressure. Our experience of the latter mode of procedure was still small, but he hoped it would soon be enlarged; it might even now be said, that no bad results had attended its employment.

Professor Simpson, after some remarks, observed that acupressure at first met with the usual objections urged against all proposed surgical innovations, that the principle was not new, that it was not sufficient as a means to arrest surgical hæmorrhage, and that it had no advantages over the ligature. Every one knew that it was almost impossible to suggest anything entirely new in medicine. When the idea of acupressure had first occurred to him (*Dr Simpson*), he searched diligently a great number of surgical works, but could find no trace of it. It might be found proposed in some corner in medical literature; but that was really a matter of little or no moment. When acupressure was proposed, many surgeons doubted whether it would have in reality the effect of arresting hæmorrhage; but that it can and does arrest hæmorrhage, as easily and certainly as the ligature, is now well known to all who have seen it employed. Acupressure, however, was still in its infancy, and it was reasonable to expect that better methods of practising it might be discovered. Many different methods of applying the ligature were formerly suggested and tried and rejected; and it was long after the ligature had been introduced by *Ambrose Paré* before it became general. Two or three hundred years afterwards it had not found its way into the hospitals of Paris, where caustics and cauteries were still employed to stop bleeding after amputation. He (*Dr Simpson*) had often expressed the opinion that other methods of applying acupressure might be discovered, better and simpler than those which he had first suggested. Short common needles introduced so as to compress the bleeding arteries from the surface of the wound, instead of the surface of the skin, were in many cases preferable, as recent practice has shown. In the last case of amputation at which he had been present he had adopted a new procedure. He introduced a small needle, threaded with iron-wire, behind the artery, and then throwing the noose of a duplicature of another iron thread over the point

of the needle, he carried this double thread across the mouth or site of the bleeding vessel, gave it one twist below the eye-end of the needle, and thus compressed the artery easily and speedily to any required extent. It was a kind of "temporary ligature," to use the language of surgeons, removable in a minute, hour, or day, by drawing out the needle by traction at the thread passed through its eye. Dr Watson had expressed doubts as to any advantages being gained by acupressure, or by removing all foreign bodies in a few hours, or in a day or two, after the wound had been made from the interior of the wound. Dr Simpson hoped that surgery was too far advanced to allow us to believe that the presence of foreign bodies between the lips of wounds could promote the healing of these wounds. No one could deny that ligatures were really foreign bodies, and soon became, in truth, small setons. In proof it was only necessary to look at the different effects produced on the tissues by organic and metallic substances. An organic thread, whether thick or thin, when left in the living body, swelled from imbibition of the fluids of the tissue in which it was embedded. But those fluids soon underwent decomposition, in the course probably of twenty-four or forty-eight hours, and when once decomposition had set in, a source of irritation was established; consequently, silk and other organic ligatures acted betimes as so many little setons. In his (Dr Simpson's) experiments on the lower animals, he had found, that when a ligature which had been in the body of an animal for a day or two was introduced into another animal, or into another part of the body of the same animal, carbuncular or gangrenous inflammation resulted often. A seton in the neck was infiltrated with decomposing, irritating fluids; a ligature was in a similar state. Dr Simpson hoped that no English surgeon would maintain, in the present state of surgical science, that the presence of irritating matter between the lips of a wound could promote the healing of a stump, or be favourable to the recovery of the patient; or that a series of small setons there, with strangled and decomposing bits of artery in their nooses, would advance these desirable objects. All recent observations seemed to show that the presence in a wound of dead and decomposing matter was one very common source of surgical fever. Ligatures were never left in a stump without some decomposition being set up; and whether anchored to strangled arteries or not, they could not but act as setons. The greatest improvement of all would be, if arteries could be shut up without a foreign body of any kind being left in the wound, even for a few hours. Velpeau had stated that, out of some 130 cases, he had met with five cases only of removal of the breast in which the wounds had healed by the first intention; and these five cases had this in common, that in none of them had ligatures been applied. Dr Coghill (a former assistant of Dr Simpson) had informed him that he had removed a diseased mamma from a very stout woman; the wound was very great, eleven inches in length; some arteries bled; needles were introduced so as to compress them, and retained only for from half-an-hour to an hour and a half; the wound was then dressed, and healed completely by the first intention. Here was a confirmation artificially, as it were, by acupressure of the truth of Velpeau's accidental observation. But it must be apparent to any person, that a wound had a better chance of healing by the first intention without than with ligatures. Dr Watson had spoken as if it had been averred that acupressure would make all wounds and stumps heal by the first intention. Dr S. had, for one, never stated this, but he had stated that acupressure would in wounds increase the chances of this most desirable result. Dr Watson had remarked that stumps, after amputation, hardly ever healed by the first intention; but in Dr Handyside's first case the stump had so healed, and Mr Edwards seemed to have had an equally successful result in two cases. Consider, too, what happened in cases of vesico-vaginal fistulæ; there you had complex tissues involved, and when the edges were brought together, there was urine always washing the wound on one side; yet, healing by the first intention could be brought about with almost perfect certainty, and this was owing to the fact that, as in the cases of removal of the breast referred to by Velpeau, no ligatures were left

between the lips of the wound. Another advantage of acupressure was, that it gave the patient a better chance of life; for while it tended to hasten the healing of wounds, it diminished also the dangers and mischances of attacks of surgical fever, by averting the necessity of small sloughs and foreign bodies being left in the depths of the wounds. And some improvement in this direction was surely desirable. Look to the results of amputation: from examining the statistics of amputations of all kinds, there appeared to be about one death in every four or five cases; Mr Inman and Dr Fenwick had found the mortality higher than one in four, basing their calculations on several thousand cases. The statistics of the Edinburgh Infirmary could not be appealed to, as they were not now published; but during the four years they had been officially published by Dr Peacock, the mortality was nearly 50 per cent., though, no doubt, many traumatic cases were included. Dr Simpson repeated, that he believed the chances of life were increased by acupressure, which promoted healing by the first intention; for, where the ligature was employed, there were always of necessity fragments of decomposing artery at the end of it; but when the vessel was secured by acupressure, this source of irritation was avoided. It had been said that the ligature was useful in giving an exit to pus; but, in Dr Simpson's opinion, it was infinitely better to have no pus formed and consequently none requiring an exit. No doubt, many other things must be attended to, when it was desired to have healing by the first intention. The presence of blood coagula, of air, or bone-dust on the surface of the stump, or of any foreign bodies, might act as sources of irritation; and, of course, all this must be attended to. It was sometimes said that one great difference between French and English surgeons was this, that the former did not try to have healing by the first intention at all, while the latter did, and often succeeded partially at least. Why should we not try to succeed still more? Dr Simpson knew well how difficult it was to introduce such a method as acupressure, in opposition to the prejudices of surgeons, and he did not expect to see it established in his own day; but he had no doubt whatever of its ultimate adoption. He had already alluded to the length of time which had elapsed before the use of the ligature became general, and he was therefore not discouraged on this account. It had been averred that the cases in which it was possible even to apply it were very few. He had notes and references now to some twenty-five or thirty amputations of the extremities in which it had been used successfully; and already in some cases it had been found applicable where the ligature was too difficult to use or had quite failed. He was informed lately by Dr McKinlay of Paisley, of an amputation immediately below the knee, where all attempts to ligature the tibial artery between the bones failed, and where acupressure at once succeeded. In a case under the care of Mr Page of Carlisle, it proved the means of saving life under the following circumstances. An old soldier presented himself with a popliteal aneurism; the same disease on the other side having been formerly cured in Dublin by compression. Compression was accordingly tried in the Carlisle hospital, but failed. The femoral artery was tied, but hæmorrhage occurred more than once, so that amputation was of necessity resorted to, and the vessels were tied in the usual way. There was sloughing of the stump and secondary hæmorrhage. The femoral artery was tied, but the bleeding recurred. At last, the vessels were secured with long needles, and the patient got well. Probably, but for the needles, the man would not now be alive. When Dr Wagner was here he stated that Langenbeck and he secured almost all bleeding arteries by ligatures of iron wire instead of silk. Dr Simpson had tried some months ago to remove a portion of the back wall of a prolapsed vagina by strangling it with iron wire, but he had failed; he had also failed to remove hæmorrhoids in this way; and Dr Bickersteth of Liverpool had told him the same thing. It might be, that metal would not produce easily that gangrene which was readily produced when silk was employed; and therefore it was possible that the Germans were right in applying metallic ligatures to arteries; and metallic were very different from silk ligatures, as for iron, silver, and most metals there was a tolerance in the living tissues.

Mr Spence (having left the chair) would first refer to the results and statistics of amputations. He had now performed about 170 of the greater amputations, and out of all these he had only had two cases of secondary hæmorrhage. One of the occasions on which it had occurred was after an amputation at the shoulder-joint in the country, on account of injury, and where it was occasioned by the patient getting up too soon. The other was in a case of high operation of the thigh, on account of a malignant tumour, and where the hæmorrhage occurred while the patient was suffering from pyæmia. In speaking of amputations and their results, it was always necessary to take into consideration the morbid conditions on account of which they were performed, as the danger to life was very different in different cases. If, for example, amputation of the thigh was performed on account of diseases of the knee-joint, burns, or necrosis, the operation was almost uniformly successful. Thus, out of the last twenty-seven consecutive cases in which he (*Mr Spence*) had amputated the thigh on account of disease of the knee-joint and the like, he had only lost one case; and it appeared that *Professor Syme's* results had been equally good, as it was mentioned in a work published some little time ago that out of twenty consecutive cases he had not lost one. The results of primary amputations were very different, as here many other circumstances had to be taken into consideration. The surgeon was often called upon to operate in almost helpless cases, and the effect of "shock" introduced a most important disturbing element. *Professor Simpson* had spoken of ligatures as setons; *Mr Spence* would not quarrel with the term, although he thought it better to avoid the use of all expressions which savoured of exaggeration. Now, *Mr Spence* had never seen any bad effects which could fairly be ascribed to ligatures. He had at present in the hospital three cases of amputation of the thigh, and two of amputation at the shoulder-joint, in which the ordinary ligatures had been employed: in one, the operation had been performed three weeks ago, and the patient had been sitting up for some days; all his other operations had been performed within the last five weeks: more than one of the patients had been dismissed, all were sitting up, and in no case had the slightest untoward circumstance occurred.

Dr Simpson had spoken of a portion of the artery included in the ligature sloughing and acting as a source of irritation. This *Mr Spence* considered an exaggeration of terms. He had made many experiments upon ligaturing the arteries in the lower animals, and he had never found anything like gangrene. He had never found more than a little shrivelled bit of the artery, and it could not be conceived that this should produce any bad effect. But were there no risks attendant upon acupressure? In introducing the needle, more than the mere artery must be injured; and in order to produce sufficient pressure upon the vessel, there must be a certain amount of counter-pressure, which must act injuriously upon the tissues. *Dr Simpson* had spoken of the wound after the operation for vesico-vaginal fistula healing by the first intention; but such a wound was very different from a stump: for in the first place, all the tissues involved had a uniform and high degree of vitality; and in the second, there was a free surface on each side, from which any discharge could come away. But in the case of stumps it was not to be anticipated that they should frequently heal by the first intention. Various kinds of tissues, of different degrees of vitality, were involved, and it could scarcely be expected that healing should take place without a certain degree of suppuration. *Dr Handyside's* first case had been referred to as an example of healing by the first intention after acupressure, but *Mr Spence* could not look upon it as such, as an abscess had occurred in the groin, which was no doubt occasioned by irritation extending up the sheath of the femoral vessels. In the case of removal of the breast, it was not rare to have complete healing, except at the points where the ligatures hung out. But it had been almost invariably noticed, that in proportion to the rapidity of healing was the probability of the occurrence of secondary abscess. In cases of atheromatous degeneration of the arteries, acupressure might be beneficial, as in applying the ligature there was a risk of the vessel giving way; but in ordinary surgery *Mr Spence* could not see any advantage which the needle possessed over the ligature; and he was so satisfied by expe-

rience of the benefits of the latter, that he did not feel justified in abandoning it in favour of any new expedient.

Dr Handyside ascribed the success of Mr Spence, in reference to the rare occurrence of secondary hæmorrhage after his amputations, to the great care with which he isolated the arteries and applied the ligature at the proper point. Mr Spence had had only two such cases of secondary hæmorrhage; but Dr H. remembered that when he was a student, this accident was no unusual occurrence. Surgeons then were not so careful in laying hold of the arteries alone as they were now, and they therefore often included in the ligature other tissues besides the arterial coats. Mr Spence had asked, whether in applying acupressure there was not a risk of producing injurious pressure on adjoining parts. But in the case which Dr Handyside had read, it was mentioned that the artery of the sciatic nerve had been compressed; now here was sufficient compression to arrest hæmorrhage in the centre of the nerve, and yet no injurious pressure was exerted upon the delicate nerve tissue; the patient had remained to this day free of any such symptom; and he (Dr H.) had never heard of any such injurious effects being produced, while it should be borne in mind that a very slight pressure would arrest the flow of blood in an artery.

Professor Simpson observed, that at another meeting it had been declared by an eminent surgical teacher, that the strangling of the end of an artery by the ligature did not produce gangrene in the strangled part. But he believed that surgeon, and all others, adopted in their daily practice the ligature of hæmorrhoids, polypi, etc., on the very principle that the deligation does produce gangrene of them. The mere small size of the decomposing gangrenous mass did not alter the principle. And surely no surgeon would deem it right to introduce willingly between the lips of a wound four or five sloughing, gangrenous centres, however small, as happened when four or five ligatures were used. He further alluded to the circumstance that surgeons were in the habit of tying arteries with great force, so as to divide the two internal coats of the vessel; and he could not but think that they had thence been led to fancy, that whenever they desired to obstruct a vessel they must use the same force. But, undoubtedly, a very slight force was sufficient, infinitely less than was requisite to lacerate the artery, or to produce death of its coats. He thought surgeons belied their own principles, as they acted at present. They had given up using silk sutures, on the ground that metallic stitches were less irritating; but they continued to tie bits of silk around sloughy matter into stumps, instead of employing a means which obviated all such inconvenience. Metallic sutures without, and silk ligatures within, were as contradictory as the whitened sepulchre, very fair outside, but with corruption and decomposition inside.

Dr Gillespie had never seen any bad effects from the ligature; no doubt the patient might experience a little uneasiness if the surgeon pulled gently at it before it was ready to come away; but the pain was very trifling indeed. With regard to the case detailed by Dr Handyside, there had been suppuration, and hence it appeared that suppuration might follow acupressure just as well as the application of ligatures; and hence it could not be said when suppuration occurred after ligatures have been employed, that it was due to that cause. Dr Gillespie was quite willing to adopt acupressure to-morrow if it could be shown that the silk ligature had produced danger or discomfort in any cases of amputation. It was possible that in minor cases acupressure might promote healing by the first intention, but he had never seen this occur after any of the greater amputations.

UNIVERSITY OF EDINBURGH—EXAMINERS IN MEDICINE.—At a meeting of the University Court of the University of Edinburgh, held on Friday the 10th January,—Present, the Right Hon. W. E. Gladstone, Lord Rector, Principal Sir David Brewster, the Hon. the Solicitor-General, Robert S. Grieve, Esq., Dr Brown, Dr Alexander Wood, and Dr Christison,—the following gentlemen were elected Non-professorial Examiners in the Faculty of Medicine, viz. :—Dr James Begbie, F.R.C.P., Dr William Robertson, F.R.C.P., and Dr Douglas Maclagan, F.R.C.S.

PROFESSORS SYME AND VELPEAU ON THE TREATMENT OF FRACTURE OF THE FEMUR.

IN a recent number of a Dutch medical journal a criticism of Mr Syme's *Observations in Clinical Surgery*, by Dr J. Van der Hoeven, has been published. We allude to it chiefly because the writer directs attention to the circumstance that Professor Velpeau is at one with Mr Syme as to the rationale of the treatment of fractures of the femur by means of the long splint. Mr Syme maintains that, in the treatment of this injury, extension is unnecessary, and that the use of the long splint consists in restraining the movements of all the articulations of the limb. This opinion, as our readers are well aware, is very different from that usually entertained, but it is satisfactory to find that so high an authority as Velpeau has come to the same conclusion. Dr Van der Hoeven quotes the following remarks made by Professor Velpeau, in reference to three cases of fractured thighbone, in which cures took place, with slight shortening, but without lameness resulting:—

“These three facts, taken in connexion with a good many others which have come under my notice, enable me to establish a principle at variance with the opinions generally entertained. People cannot understand a difference in the length of the two lower limbs without the production of perceptible lameness, and it is easy to read in the treatises on fractures that shortening succeeding fractures of the thigh is serious, because it may be followed by a very disagreeable result, lameness. The treatment of these fractures is conducted in conformity with these indications, and numerous forms of apparatus have been invented, or are invented every day, with the object of obviating shortening. Some are intended, it is said, to overcome the action of the powerful muscles of the thigh, to which is due the displacement of the fragments in respect to height. Others are intended to obviate the difficulties in the way of a regular coaptation. A Polish author has brought together in a monograph all these kinds of apparatus, which amounted to about two hundred, a number which has since been augmented by numerous inventors. I am far from blaming the zeal of surgeons, and the only reflection with which these attempts inspire me is, that they are unnecessary. The draggings which are to be exercised upon a thigh are not free from danger; the occurrence of sloughing under the tight bandages often makes it necessary to discontinue the traction, in itself so painful. From another point of view, the absence of limping in cases of well marked shortening is a second counter-indication against exaggerated efforts of extension, which perhaps have never proved successful. If any surgeons were to affirm the contrary, and were to tell me that they have seen fractures of the thigh get well without any shortening, I should make use of the expression of Fontenelle, ‘Je le crois puisque vous me le dites, mais je l'aurais vu que je ne le croirais pas.’ (I believe it since you tell me so, but I should not have believed it had I seen it myself.) And I should ask them if they have generally seen their patients limp in whom there was shortening of the limb. If displacements of an angular character and occasioned by rotation can be prevented, the result is already satisfactory.”

DR PINKERTON, R.A.

A FEW months ago it was our melancholy duty to record the death of a talented Indian Medical Officer, Dr James Allan Currie, cut off by cholera in the midst of a philanthropic and distinguished career. It is again our painful task to record the death of another Edinburgh graduate, Dr Pinkerton, who has also fallen a victim in eastern lands to his devotion to his profession. We extract from the *Lancet* the following particulars regarding him:—

“Archibald William Pulteney Pinkerton was the only surviving son of the late Captain Pinkerton of the Royal Marines, and nephew of the late Dr Alison, the well-known Professor of the Practice of Medicine in the University of Edinburgh. Following in the footsteps of his uncle, he early embraced the profession of Medicine, and graduated at the University of Edinburgh in 1850. After graduation, he served for twelve months as resident physician in the Edinburgh

Royal Infirmary. He then travelled for some years in the capacity of a private physician, and, as the result of his observations during this period, published two excellent papers on the Climate of Malaga, and on the Climate of Teneriffe, in the *Edinburgh Monthly Journal of Medical Science* for 1853 and 1854. He afterwards practised for a year at Bournemouth, and published a series of lectures on the medical capabilities of that watering-place, the proceeds of the sale of which were devoted to the payment of Scripture-readers going to the Crimea.

"When the Crimean war broke out, he volunteered his services to the army, and was appointed assistant-surgeon on the staff. Proceeding to the Crimea in the spring of 1855, he was attached to the 72d Highlanders, and was present with that corps during the severe outbreak of cholera that followed its arrival in the East. His patient assiduity, untiring watchfulness, and resolute discharge of duty, endeared him to every officer and soldier in its ranks. Present in the trenches during the assaults upon Sebastopol on the 18th of June and 8th of September, he shared in the dangers as well as in the hardships of the siege.

"Returning to England on the peace, and believing the army no longer likely to afford occupation to a zealous student of his art, he quitted its ranks and turned for a time to civil practice. In 1857 he published in the *Edinburgh Medical Journal* three papers, entitled 'Cases of Fever as seen in the Crimea,' 'Phthisis and Climate,' and 'The spread of Cholera by Personal Communication.' His accumulated observations on the effect of climate on various diseases were now, for the benefit of his profession, given to the public in a series of lectures on Climatology in the Surgeon's Hall at Edinburgh. The introductory lecture, which was published, displayed great originality and research.

"No sooner did the Indian mutiny break out, than Pinkerton once more turned to the pursuit of his choice, and was reappointed an assistant-surgeon on the staff, and sent out to Bengal. On going up country to join the army in the field, he was selected by Lord Clyde, the Commander-in-chief, to fill temporarily a medical appointment on his personal staff; and on the return of peace he was appointed to the Royal Artillery, and placed in the medical charge of the Sanitarium at Nynee Tâl. When his two years' period of service there had expired, he proceeded to do duty at Allahabad. That severe and desolating epidemic which swept with such destructive force across the Indian Continent last autumn soon reached the station, and foremost at the post of duty, Pinkerton was early struck down by cholera. When all hope seemed past, he rallied, and recovered so much that he was sent to Aden to join his battery of the Royal Artillery. But on his arrival there, fever set in. This, supervening on a constitution broken by suffering, proved fatal; and, after a few days' illness, he sank peacefully to rest on the 21st November 1861, at the early age of thirty-two.

"Tall of stature, gentle in manner, kindly in disposition, he was equally beloved by his friends in civil life, and dear to his comrades in the camp. Ardently attached to and highly skilled in his profession, he veiled much talent beneath a modesty which permitted it only to appear when suffering was to be alleviated or duty to be done. He knew no one who did not become his friend, and by no friend will he ever be forgotten."

VARIETIES.

THE ORIGINATOR OF THE BRUNONIAN THEORY.

THE following notice by a cotemporary of Dr John Brown, the author of the once celebrated "Brunonian Theory," will be interesting to our readers¹:—

"During the winter 1767-8, I made a long visit to my friends in Edinburgh. About this time John Brown, an old schoolfellow at Dunse, communicated to me his bold project of becoming the author of a new medical school, in avowed opposition to the system then taught in the University of Edinburgh. His celebrity for a time entitles him to a place in these memoirs, especially as I had the opportunity of a more intimate knowledge of his history and character than most of his acquaintances.

¹ From "*My Own Life and Times, 1741-1814.*" By Thomas Somerville, D.D., Minister of Jedburgh. Edinburgh: Edmonston & Douglas: 1861.

"John Brown, or Joannes Brunonius as he called himself, was born at Preston, in the parish of Buncle, in the year 1736. His father, a weaver in poor circumstances, was a Seceder, or adherent to that party which had recently left the Established Church on account of the errors in doctrine, and the corruptions of discipline and manners with which they believed it to be polluted. A conscientious ambition of devoting his son to the service of the good cause, in the office of the ministry, made him comply with John's ardent desire by sending him to the Latin school at Dunse; and after the father's death, it was alleged that the Antiburgher congregation, to which he belonged, with the same view supported him at school out of their weekly collections. Brown's proficiency was so rapid, and he so far surpassed the attainments of the rest of the scholars, that he soon became the oracle of the school. His sectarian zeal continued unabated for two or three years after his becoming Mr Crnickshanks' scholar. The synod of Merse and Teviotdale, however, happening to meet at Dunse in 1754, John Brown, prompted by curiosity and the urgency of his companions, was prevailed upon to enter within the walls of the church, and to hear the sermon delivered on that occasion by the moderator of the synod, thinking perhaps that his transgression was less heinous because committed on a week-day. He was immediately summoned to appear before Mr White's session, and admonished and rebuked for the offence he had given to the congregation. I do not recollect whether or not upon this event he immediately broke up all connexion with the Seceders, but the final result was a total separation. On going to college in 1756—which he did with the view of studying for the church—Brown was more distinguished for his pugilistic exploits than classical accomplishments; the derision excited by his figure, deportment, and dress, all of them strange and eccentric, having at first led to frequent personal rencontres with his fellow-students. About this time the attention of the literary world began to be attracted by the publication of David Hume's Philosophical Essays, admired for their depth and ingenuity even by many who considered them as alike hurtful to the interests of morality and religion. From being a reader, Brown became an enthusiastic admirer of Hume's philosophy, and to his confidential friends he declared himself a convert to scepticism, from which he never was reclaimed.

"In the year 1761, Mr Elliot of Arkleton being a candidate for a degree in medicine, on my recommendation employed Brown to translate the thesis prescribed as a part of his trial. This task gave a new turn to his views. He began to study medicine, receiving free tickets from the professors, and deriving a comfortable subsistence by giving instructions in Latin to medical students, and by monopolizing the trade of translating the theses of medical probationers. He had the good fortune to attract the notice and favour of Dr Cullen, who employed him as his Latin secretary, and rewarded him liberally for his service. His attachment to Dr Cullen for a time seemed to exceed the ordinary bounds of gratitude. He never mentioned his name but with admiration and rapture, and would have hazarded his life in defence of his honour. His children—for he had now entered into the married state—were all baptized by the names of Dr Cullen and his sons and daughters in succession. One of the Medical Chairs happening to become vacant, Brown had conceived that nothing but Dr Cullen's interest was necessary to secure the appointment to himself; when that was honestly denied him, his vindictive rage against the Doctor was not less extreme than had been his admiration and gratitude; and it was in the attempt, by way of retaliation, to impeach Dr Cullen's scientific merits, that what is called the Brunonian theory of medicine first took its origin.

"The eminence Dr Brown acquired as the originator of a new school did not contribute to the melioration of his fortune, or the improvement of his moral character and domestic happiness. His mind grew inflated, domestic duties and enjoyments were neglected and slighted, his plans of life were fluctuating, arrogant, and chimerical. His circumstances became embarrassed; some of his friends were involved in the consequences of his imprudence and extravagance; and he was reduced to the humiliating experience of imprison-

ment for debt. Hope, however, never forsook him. After making the last composition with his creditors he removed to London, in full confidence of ascending to the pinnacle of opulence and fame by practising as a physician. He soon after died, and left his widow and children entirely dependent on the aid of his charitable friends and disciples.

"Dr Brown's literary accomplishments, though brilliant, were confined within a narrow circle. His memory, the great instrument of his proficiency as a scholar, far outstripped his judgment and taste. His fluency, and readiness in the command of his vernacular tongue, were not less extraordinary than his facility in Latin composition. In the Theological Society he used to speak at great length almost on every subject. His thoughts, however, were incoherent, his arguments superficial, and his style loose, diffuse, and inelegant. His errors and irregularities were, alas, but too palpable. His best qualities, and his virtues, were best known only by his most intimate friends. He possessed great courage, both passive and active. He was firm and undaunted under adversity. He never shrunk from danger. Notwithstanding his apparent arrogance and self-sufficiency, he was not independent of the influence of his superiors in understanding, but he also thought for himself, and adhered firmly to those opinions which he had adopted after inquiry and conviction. The most respectable and amiable feature in Dr Brown's character was an ardent attachment to his early friends. He was always ready to undertake most laborious services, and to submit to the most disinterested sacrifices to advance their interest. The constancy of his affection to myself, and the substantial services he rendered me, made it impossible for me to withdraw my regard for him, notwithstanding the irregularity of his conduct, and the wide discordance of our sentiments."

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Remarks on certain Medico-Legal Aspects of the Maclean Will Case.* By W. T. GAIRDNER, M.D.

HAVING been favoured by the agent for the defenders in the Maclean Will Case with a complete and carefully corrected verbatim Report, by Mr J. Irvine Smith, short-hand writer, of the evidence and of the addresses of counsel on both sides, as well as of the judge's charge, I am now in a position to submit to the readers of this Journal a few reflections on some medico-legal aspects of the case, which have been the subject of critical objections apparently founded on an imperfect knowledge of the facts. While I shall of necessity have in view, to some extent, the remarks of "The Journal of Mental Science," I trust I shall not be betrayed into any undue amount of personal controversy; it is, indeed, my intention to avoid all such discussions as much as possible in the circumstances. I can afford to leave Dr Bucknill in undisputed possession of his *repertoire* of not very lively wit, borrowed (but by no means improved) from Tristram Shandy; nor do I intend to interfere with the prospects of that promised "forthcoming immortal work on the 'Physiology of the Universe,'" of which I will only venture to say here, that I trust it will be less one-sided than the account of the Maclean Will Case, in the "Journal of Mental Science."¹

In the course of a protracted inquiry into the testamentary capacity of Colonel Maclean, it became important (or at least appeared to the pursuer's counsel to be important) to determine, if possible, the precise bearing of certain alleged symptoms of cerebral disease from which the testator suffered during the last years or months of his life, upon the question of his sanity or insanity. It was admitted on all hands that the testator was an eccentric old military officer, who had served, with a certain degree of credit and reputation however, mostly in the East and West Indies, for forty-three years; and who, after several attacks of a supposed apoplectic or epileptic character, was recorded in the registrar's books as

¹ See Edinburgh Medical Journal, November 1861, p. 500.

having died at the advanced age of eighty-two years (more probably, however, in fact eighty years), on the 17th April 1859, at Cumbræ; the cause of his death being stated by Dr M'Gowan (who attended him in his last illness, but did not procure a post-mortem examination) as "softening of the brain, of nine months' duration." The calling of medical evidence in the case arose upon the following issue. The theory of the pursuer was to the effect that the alleged "softening of the brain" was simply the terminal fact of a gradually developed insanity, commencing with a supposed attack of sunstroke in 1841 or 1842, seventeen or eighteen years before death; and that the attacks of apoplexy or epilepsy were the natural end of such a gradually progressive insanity. The theory of the defenders was, that there was no sunstroke at all in the case, and no insanity; that the old man died, it is true, of some form of nervous disorder, commonly known as connected with "softening of the brain;" but that, notwithstanding this mode of death in 1859, when he was about eighty years of age, there was nothing in his state of mind to vitiate his main settlement made in 1856, or any of the subsequent codicils. The medical evidence for the pursuers was intended to show that all the facts stated by the witnesses, including the alleged "softening of the brain," were such as absolutely to require, or at least to give extreme probability to, the theory of insanity. The medical evidence for the defenders, on the other hand, assumed that apoplectic or epileptic attacks in an aged man, ending in what a respectable medical practitioner thought to be "softening of the brain," were perfectly consistent with a state of mind enabling him to execute a valid will either previous to the attacks or in their intervals. The precise character of the attacks themselves was likewise brought into question; some of them appearing, on the statements of witnesses, to have been accompanied by loss of sensibility and of voluntary motor power, and others not; the evidence of Dr M'Gowan, who attended Maclean for the last fourteen months of his life, being expressly that the fatal disease was "apoplexy," and that the "softening of the brain," supposed by him to be the cause of death, was directly inferred from the existence of the apoplectic and paralytic symptoms. Thus far, there can be no doubt or controversy whatever as to the state of the question at issue. By the one side, the fatal disease was assumed to be insanity, such as to vitiate the will; by the other, it was presumed to be most probably apoplexy and subsequent paralysis, without any such insanity. The true bearing of the following evidence will appear from this preliminary statement of facts.

Dr William T. Gairdner called and examined :

"By the Lord Advocate.—I have read the correspondence in this case, and the settlement, and the conclusion which I draw from these is, that Colonel Maclean was perfectly capable of making a will, and that particular will. My view is, that the will is consistent with the whole course of his ideas, as expressed in the correspondence; that it is the natural consequence of the correspondence,

and stands in a natural relation with the mind of the man who wrote that correspondence. I think that no man who had not a mind of his own could have carried on that correspondence, or could have written that will, or could have preserved the connexion of ideas that I observe throughout the whole of that correspondence. That opinion would not be at all affected by the fact that he had had three attacks of apoplexy, of the last of which he died, because the opinion is founded upon facts that speak for themselves. I know as a fact that softening of the brain does not necessarily injure the mental powers. Softening of the brain may co-exist with vigorous intellectual power. I have known various instances of persons fulfilling important functions, who have died of softening of the brain, and who, in my opinion, must have had that softening of the brain when they were fulfilling these functions. I know one case in a particularly intimate manner, of a person, who was a judge in this very Court, who had softening of the brain, who died of apoplexy, with which he was seized three days before his death, who had for three or four months been daily fulfilling the office of judge with perfect approval and with perfect clear-headedness, and who, from the appearances found in his body, must have had softening of the brain, and probably several softenings of the brain, for a long period before that. Suppose you were told that an old army officer was given sometimes to breaking off sentences short, but was quite capable of carrying on a connected conversation; that he had the habit of talking to himself at times; that once or twice he was heard to roar out in the night-time when by himself; that he was much given to free and obscene talk, even on the streets, and to little girls; and that he was restless and extremely irritable, without much or without any cause,—would you think that these facts alone could bring you to the conclusion that the man was insane?—No; they amount to eccentricity, but not to more.

By Mr Young.—It is not the common case that high intellectual powers coexist with softening of the brain. The common case is, that softening of the brain leads to paralysis or convulsion, or coma, in the first instance, and is followed by recovery of the power of motion and sensation, and the powers of mind to a greater or less extent, very often not perfectly, but pretty frequently also perfectly; but, generally speaking, I would say in the average of cases, leaving a little mark upon the mind. Softening of the brain and insanity do coexist, but not very frequently—not more frequently, perhaps, than softening of the brain exists without insanity; but very often people speak of softening of the brain in relation to insanity, though it has not been pathologically ascertained to exist. I am speaking of that which is a positive ascertained injury to the cerebral substance. Organic disease of the brain is not uncommon with insane people; but very often insane people have no visible organic disease. I don't know that there must be organic disease of the brain when you have insanity; it is one of the moot points. Are attacks of an epileptic or paralytic nature, or combining both, partly paralytic and partly epileptic, attributable to organic disease of the brain?—Paralytic, I would say, almost always; epileptic not. Never, do you mean?—No, not necessarily, and I mean by organic disease, ascertainable organic disease. I don't say what may be beyond the evidence of our senses. Organic disease of the brain may lead to rambling, incoherent talking. That is frequently a symptom of it. Roaring out when alone, and without any ascertainable cause—is that not a symptom of disease of the brain?—I don't think so; it is not of organic disease of the brain. Don't insane people, in madhouses, frequently roar out when they are alone?—Of course; I meant to say it is more a symptom of insanity than of organic disease of the brain. It is not a symptom of organic disease of the brain, taken by itself.

The Lord Advocate.—You said there is a kind of softening of the brain connected with insanity which is not that of which you were speaking?—In one sense, yes. But what I meant to say was, that people speak of softening of the brain in cases of insanity when I believe there is no real softening. They speak of insane people as having softened brains when there is no evidence

of it. It is a very common term, applied to some kinds of insanity without sufficient reason. In cases of insanity, is the paralysis generally partial or total?—There is a kind of insanity which is attended by paralysis in a number of parts of the body, and which is called general paralysis on that account. In the more common case, when softening of the brain produces paralysis of one side, is it or is it not quite common that the faculties are not impaired?—It is sufficiently common not to be at all out of any medical man's experience. I have seen, I suppose, a dozen or two cases. If you were told that a man had had such an attack, and had written these letters, what would the conclusion be at which you would arrive?—That he was sane. It would not affect my conclusion drawn from the letters themselves—that he was sane when he wrote them.

“*By Lord Justice-Clerk.*—Softening of the brain is very often a fatal disease; but it is still consistent with prolonged life. It is not always fatal in the end; a person may have softening of the brain, live for years, and die of some other disease altogether. It is not of the nature of the disease that it goes on getting worse always. It is a disease exceedingly varied in its consequences, sometimes followed by only a little paralysis, sometimes by convulsions, sometimes by affections of the mental faculties, and from all of these a man may recover, and pursue the ordinary functions of life for years. A man may entirely recover from softening of the brain. I know at least of one very good instance of recovery in a gentleman who was a member of my own profession, and who has often told me his own case. He lived to a very advanced age, upwards of 80, I think, or close upon 80, and he has often told me that he had every symptom that denotes softening of the brain at the age of from 25 to 30, recovered perfectly, and enjoyed the best of health. My belief is that he had softening of the brain; I think there is good collateral evidence of it. I may also mention that the late Dr Adam Ferguson lived for years after an attack which any medical man would recognise as of that kind. That case of course I don't know personally, but it used to be recorded by the late Dr Gregory in his lectures as a case of recovery after paralysis.”

I have certain personal reasons for requesting the reader (especially if he be also a reader of the “*Journal of Mental Science*”) to be particular in noting some of the expressions in this report. Dr Bucknill will, I think, himself see reason to be ashamed of his persistent efforts to put me in the wrong by arguing from the conveniently abridged report given by him in his *Journal*, *first*, that I said what was untrue;¹ and (after that argument was demolished), *secondly*, that I failed to say what was necessary to the truth.² It is a sufficient but necessary defence against both of these rather unhand-some insinuations, to bring the whole of my own evidence before the reader; for it cannot fail to be quite clearly apparent that I was most particular in placing what I said beyond the possibility of mis-construction by any one not bent on fault-finding at all hazards. I did not, indeed, in giving evidence on oath in a court of justice, think proper to cut and carve my assertions on matters of fact according

¹ “Dr W. T. Gairdner had either the audacity or the innocence to tell the Judge,” etc. etc. No. for October 1861, p. 458.

² “The term *softening of the brain* is accepted by the general public to mean a softened condition of the whole organ, to describe, in fact, the common water-logged brain of chronic lunatics. . . . Now Dr Gairdner has made use of the term *softening of the brain*, so that it might be applied in this loose and general manner, when in the cause of truth he ought to have defined the affection,” etc. No. for January 1862, p. 597.

to the peculiar notions of the "fashionable alienist,"¹ bent on "saving the feelings,"—in other words, practising a fashionable deception on the friends of his patients. Nor did I think it altogether a question of "good taste," to cite as an instance of my meaning the case of a person in a high judicial position, when this was in specific terms demanded of me by counsel, so as to leave me no alternative as to the precise form of the answer. I rather think that the only real violation of good taste in this instance is the extremely flippant manner of the *Journal of Mental Science* in dealing with illustrations given in such circumstances. The other charges of Dr Bucknill I am quite content to pass over, inasmuch as he now admits the facts I alleged to be possibly or probably correct. I do not mean even to indulge his curiosity with a further analysis of the case of the judge, though it would be very easy to do so, as the materials are at hand, and ample. Had this not been so, Dr Bucknill may be perfectly well assured that I never would have made the reference to that case in the terms I did. With respect to the legal validity of my evidence, I will only say that if my "hearsay information" passed current in open court, under the sharp scrutiny of a first-rate judicial authority, and of the ablest counsel at the Scotch bar on either side, I am very much at ease as to what may be thought of it down in Devonshire, at the County Asylum.

But here ends the personal part of this matter. It is more to the purpose to observe that the evidence given by me, and here recorded, is in every point in exact accordance with the conclusions of the eminent and learned judge who tried the case, and whose very able charge to the jury develops principles of law, as applied to the question of testamentary capacity, which have probably never before been so clearly stated. That these principles are important to every medical practitioner, and especially so to every man at all likely to be called as a witness in similar cases, I need hardly point out. That they are not established quite beyond the possibility of cavil, I infer from the objections taken by the counsel for the pursuer to the judge's reading of the law; objections which, I am informed, would have been made the foundation of a motion for a new trial, had the verdict gone the other way. The ill-defined and slippery state of the law in cases of this kind was, indeed, fully present to my mind in giving evidence; and I trust it may not be without advantage to the reader to refer to this subject in the light of the full notes of the judge's charge now before me, and hitherto unpublished. I shall, however, to save time and space, for the most part omit all those passages of the charge which deal with the details of evidence; referring the reader, on this and other topics of interest, to the condensed summary of the whole case, including

¹ "I seldom tell the friends of my patient," a fashionable alienist once said to us, "that the man is insane, I say he has softening of the brain; it saves the feelings." No. for January 1862, p. 597.

the charge, in the No. of the *Edinburgh Medical Journal* for September 1861 (p. 298).

In referring to the state of mind of Colonel Maclean, as involved in the first two issues before the jury, the Lord Justice-Clerk remarked that the first issue raised the question of the capacity of the testator to execute the deed, while the second issue was "founded upon an allegation of a certain degree of mental weakness and facility, not sufficient of itself to void the settlement, but rendering the testator open to improper practices and solicitation by interested parties." The first issue, in other words, asked the jury to declare that the testator was incapable of making the settlement; the second, that he was capable of making it, but was wrongly biassed and influenced in doing so. In the course of a remarkably clear exposition of the essential difference between these two issues, the judge expressly declared them to be, according to his opinion, logically inconsistent with each other, and told the jury that they could find for the pursuer either *on the one or the other, but not on both*. "The second issue . . . is not, in my opinion, consistent with the first issue. I don't think you could find in favour of the pursuer upon both issues." Yet, in the face of this very plain distinction between these issues, which was not objected to by counsel, and is, in fact, transparently obvious, the jury returned precisely that inconsistent verdict for the pursuer on both issues, which was pronounced impossible in logic (though apparently competent in law) by the judge. They affirmed, in one breath, that Colonel Maclean was *both* capable and incapable, *both* of sane disposing capacity, and not so. It is hardly necessary, after this, to say much more on the subject of the verdict, which was about as much in accordance with the evidence, as it was with the law, of the case.

To return to the judge's charge. As the second issue clearly involved no question of medical interest, being confined to the allegation of "fraud and circumvention" by the housekeeper, the only remarks which have any proper place here are those on the first issue, which was as follows:—"Whether the trust-deed of settlement, libelled, dated 27th October 1856, is not the deed of the said Alexander Maclean?" Upon this his lordship remarked:—

"That issue puts to you the question substantially, whether the testator was, at the time that he made that settlement, in a state of mental capacity to enable him to do it? If he was not, then the deed is, in the language of the issue, not his deed. But if he was mentally capable of executing that settlement, then you must return a negative answer to that issue."

Further on, the following remarks occur on the same subject:—

"The first issue—and the same issue is repeated with reference to each of the five deeds—the first issue is, whether the trust-deed is not the deed of the said Alexander Maclean? Now, as I told you before, this means that the testator had not capacity to execute such a deed. I am not going to give you any definition of what insanity is, and I am not even going to define to you what legal capacity is in a question of this kind; because I may tell you at

once that the question whether a man is in such a state of mind as to be capable of executing a deed of this kind, is a question of fact, and not a question of law. It may in some cases embrace questions of law, and it may also in some cases embrace questions, and very difficult questions of medical science. In my humble opinion there is neither law nor medical science in this case. I have no direction to give you in point of law in regard to that issue, and I look upon the medical evidence, with all due respect to the eminence of the gentlemen who were examined as witnesses, as of no value whatever. They have not been able to ascertain, and it would have been very strange if they could have ascertained with any degree of certainty, what was the disease under which this gentleman was labouring during the later years of his life. And, therefore, they cannot tell what, according to the experience of the medical profession, or according to medical science, may be expected to be the consequences and effects of that disease. They are asked, and have been asked over and over again, when in the box, to form their opinions whether the man was insane, or whether he was capable of executing his will, upon a consideration of the facts of the case, upon a consideration of all his peculiarities in manner and speech and behaviour, upon a reading of his letters, upon a general consideration of how far he could express himself coherently, and how far he could form definite and rational ideas upon various subjects. Gentlemen, I tell you once for all, and I dismiss the subject with that observation, that it is not a question for medical witnesses. It is a question for you, and you alone. And when medical men are asked to form opinions upon such facts as these, where there is no medical science involved at all, they are asked simply to usurp your functions. It is you who are to return a verdict upon that question of fact, whether this testator was mentally capable of executing such a settlement as he has left behind him. The test of his capacity to execute such a settlement may be very reasonably stated with reference to the nature of the settlement itself, but it cannot possibly be stated without reference to the settlement, because a man may have strength of mind—power of intellect sufficient to enable him to do one thing—to make one kind of mental exertion,—and yet he may be totally incapable of making another. A man may be so far weakened in his mind as not to be able to follow a difficult process of reasoning—not to be able to enter into a negotiation requiring a great deal of calculation and forecasting of chances, and to deal with a man who is keeping him at arm's-length, and trying to take advantage of him at each step, and yet may be perfectly capable of making a simple disposition of his property. The two things are totally different. You can easily understand that a man may not be capable of very long-sustained mental exertion, and yet be quite capable, reasonably and fairly, of saying, I want my estate to go to A. B., or I want to disinherit my heir, and to leave my estate to an hospital. It is not a very complex idea that; and if a person is capable of distinctly understanding what it is that he is doing—is capable of expressing that purpose in intelligible language, and is capable, thirdly, of understanding the consequences and effects of what he does, then he is capable of making such a settlement, and it is vain to go about scientific definitions or anything of the kind. It is a plain question of common sense."

Without entering here into the many large questions connected with the relation of insanity to the law, I must say that, as it appears to me, it would have been well for society, and not less well for the credit of the law, and of medical evidence, had the plain practical sense of the matter in hand always been kept as steadily in view as in these wholesome words from the bench. By brushing aside at one sweep all the cobwebs of medical theory and legal precedent, *in so far as they do not affect the practical issue involved*, an enormous simplification of a complex subject is effected, and one thoroughly in accordance with the dictates at once of science and of

justice. The question of legal capacity to execute a will, according to the Lord Justice-Clerk, *is simply a question of fact*. The jury may be aided in ascertaining the fact, in certain cases, by medical or by legal considerations; but it comes back in the end to this—Did the testator know what he was about in the particular case; and knowing what he meant to do, *did he do it?* In other words, *is the deed really his, or not?*—the precise issue stated in the record. With regard to this practical point, and keeping it strictly in view throughout, the judge next proceeds to investigate the evidence in detail. He first shows forth the substance of the will itself, as written in draft by the testator's own hand, and carrying internal evidence of being the spontaneous expression of his wishes. After the quotation of this holograph document at length, the following important remarks occur:—

“Now, gentlemen, it is quite impossible, I should think, for anybody to doubt that the man who wrote that with his own hand, if it were not dictated to him by somebody else, knew what he meant. That is all the length I go in the first place, but you will see immediately it is an important step. I don't understand what would be the meaning of saying that a man could originate that proposal, and write it in the language which I have read to you, and not know what he meant. That is a contradiction in terms. The writing of it also proves, in the second place, that he is capable of expressing his purpose in intelligible language. There is no difficulty in understanding that at all. The last question comes to be, Did he understand the consequences and effects of what he was doing? The consequences and effects were these, that after disposing of his father's remains, which is the only primary purpose, £20,000 of his estate after his death would be set apart to meet the exigencies of that charity, and to that extent his next of kin would be deprived of the succession. Has it been suggested that he did not understand that that would be the effect of what he did? I have not heard that said by the pursuers' counsel. Now, then, gentlemen, if he himself originated this purpose, if he expressed it in intelligible language, and if he foresaw and appreciated its legal consequences and effects, then it seems to me that the writing itself at least commends itself to you upon its face as the production of a sane man. Sometimes a writing of this kind, although expressed in perfectly intelligible language, although it may express a perfectly rational and even laudable purpose, and although the writer may understand its legal consequences and effects, may still be the production of insanity, and may appear upon its very face to be so. Supposing that he were to set out upon the face of this testament that he does make this disposition of his property because he believes something to be the case which no sane man could believe, suppose he were to tell you that he makes this disposition of his property because he has received a direct revelation from heaven that it is his duty to do it, it would be quite a different case. Then, upon the face of the deed itself, there would be something to condemn it. But certainly, in so far as this writing is concerned, there is no delusion in the deed, and the man who wrote it, it being his own act, unaided by anybody else, so far as I can see, must be held to have been mentally capable of conceiving the purpose, of expressing it in distinct language, and of foreseeing and understanding its legal consequences and effects. But, gentlemen, still further, although the deed itself may be of this character, and may prove his mental capacity so far, and may not disclose any insane belief or delusion as the spring of his action or the motive of his conduct, such may nevertheless exist; and if the pursuer has proved to your satisfaction that he was suffering under delusions which led him to execute this deed to the detriment of his own relatives, and so to cut off his natural succession, he may still prevail, because, a man may be labouring under

the most insane delusion and yet have mental capacity to do what shall, upon the face of it, appear to be a perfectly sane thing, actuated thereto by the insane delusion; and the pursuer accordingly sets himself to make a case of that kind. It is quite in vain for the pursuer here to say that the man's mind was gone, that he was incapable of expressing a rational idea, or that he was incapable of expressing an idea at all in intelligible language, because there stand his holograph instructions for his will, to contradict all that. But still the pursuer may go further and say, 'but I shall show that all that was brought about in consequence of the peculiar condition of this defender's mind, for he was acting under an insane delusion.' It seems to me that that is the only case left for the pursuer after what I have said on the first issue."

The argument in which this part of the question is dealt with is of great interest, but is too much involved in details of evidence to be quoted with advantage to the reader. Suffice it to say, that the alleged delusions and eccentricities of Colonel Maclean are very thoroughly sifted, and that the judge arrives at the very clear conclusion that none of these were proved to be such as to invalidate the spontaneous and intelligent character of the deed, as shown forth in the draft deed itself, and in the correspondence. The question of fraud and circumvention is then disposed of in the same way, and under the same thoroughly practical aspect of its bearings. The general conclusion is that the will is plainly a personal and spontaneous act,—the act of a man who knew what he was doing, and understood its consequences; and who, moreover, was under no proved delusion of mind as to the motives, nor under any undue influence as to the object of the settlement. And if these questions of fact are so settled by the jury, the judge holds that the deed must be pronounced valid, simply because it is, in effect, the real and spontaneous will of the testator, and is not the result either of mental incapacity, or of facility acted upon by fraud. The following brief extract sets in a clear point of view the judge's opinion of the complicated general evidence led on behalf of the pursuer. As formerly, I omit most of the references to details, and give only so much as seems to bear upon the principle of the opinion.

"Now, gentlemen, that being so (*i. e.*, the evidence of insane delusions, affecting testamentary capacity, being insufficient), I confess I don't see much use for entering at large into the general evidence regarding the behaviour and conduct of this man, or of his intelligence upon the various subjects that his mind was brought to bear upon. He was a very eccentric person, beyond doubt. . . . I think we can hardly resist the conclusion that he was a man of a very coarse moral nature. . . . If this had not been a very eccentric and peculiar man, we should never have had this inquiry; and it is just these eccentricities and peculiarities that have led to this thorough, and, I hope, complete investigation into what really was the condition of his intellect. A man may be not only coarse in his moral nature, but he may be thoroughly depraved—he may be depraved to the lowest degree; he may be a man of the most disagreeable and unamiable character—most unnatural and cruel to his relations; he may do the most hard-hearted and unexpected things in the way of disinheriting his kindred, all for the indulgence of his own evil passions, but he is not, therefore, necessarily insane. And I don't mean to say that that is the case of this testator; I am only stating this now by way of illustration. You cannot prevent a man from making a cruel and unnatural settlement of his affairs.

That is no evidence of his incapacity to make it—none whatever; and no amount of moral depravity, or of obliquity of moral vision in seeing what his duty and what his natural inclination ought to be, will afford any direct evidence of an impaired intellect. A man's intellect may be perfectly unimpaired, or, what is all that is necessary for the present case, he may have quite sufficient intellect to devise and execute a scheme for the settlement of his affairs; and the circumstance of his being a man of that character, and making a settlement in accordance with that depraved character, will not, in the slightest degree, affect the question of his mental capacity."

It is not the purpose of this paper to investigate how far these views are novel, or how far they are in accordance with previous judicial charges, and with the spirit of our whole jurisprudence. But that they are calculated very much to simplify the leading of medical evidence in cases of alleged testamentary incapacity, there can be but one opinion. I think, therefore, that we may reasonably hope that like principles may be sustained and acted upon in future cases, notwithstanding the curiously irrational verdict of the jury in the case of Colonel Maclean. It is hardly necessary for me to say that, in giving my evidence as above quoted, I was moved by precisely the same convictions as the presiding judge, viz., that the capacity to make a will is, as a matter of fact, not to be invalidated by remote presumptions of insanity derived from collateral evidence of eccentricity of conduct, or even of physical disease of the brain, provided there exist ample proof of sufficient intelligence to conduct affairs rationally, and make a spontaneous and consistent disposition of property. In short, it is a practical question altogether, and not one of metaphysics, or of minute and subtle refinements of cerebral pathology.

Had similar principles been applied in the late Windham case with the aid of a simple judicial machinery, such as that in use in the Scotch Courts in dealing with an application for a *curator bonis*, I cannot help thinking that a great scandal would have been saved to the world, and to the legal and medical professions.

I will merely conclude at present by quoting at length the closing discussion between the Lord Justice-Clerk and the counsel for the pursuer, as it brings out with admirable clearness the views of the former, and the legal grounds of opposition with which they might have been, or may possibly yet be, met.

"*Mr Young*.—Before the jury retire, I wish to make a suggestion on what humbly appears to me to be the law of the case, with respect to which I rather think the jury may be under some misapprehension in consequence of what has fallen from your lordship, although perhaps it may not have been intended. I understood your lordship to say to the jury, whether it was intended as a direction in point of law or not, that if the testator had capacity to know what he meant, and to express his purpose in intelligible language, and to understand the consequence and effect of what he did, he must be held to be mentally capable of making a deed.

"*Lord Justice-Clerk*.—I don't give that as a direction in law. I said that might be taken as a fair test of capacity.

"*Mr Young*.—My mode of stating it was that whether your lordship intended it as a direction in point of law or not, that is what your lordship stated to the jury.

Lord Justice-Clerk.—It is very nearly—not quite. However, gentlemen, you quite understand, what I stated in regard to that is not meant as a direction in point of law binding upon you at all. I suggest it for your consideration. The question is capacity; and I think the question of capacity is not a question of law but a question of fact, and I suggest to you the manner in which you may test the capacity of the testator.

Mr Young.—But that leads me to bring this under your lordship's notice. I think your lordship also stated to the jury with reference to the suggestion, that there might be delusions in the testator's mind, that that would not affect the validity of the settlement, unless the settlement was attributable to some delusion which existed.

Lord Justice-Clerk.—No; I don't mean to say that.

Mr Young.—I should hardly have thought so.

Lord Justice-Clerk.—It would have been a very foolish direction that to give, because it is not necessary to the case.

Mr Young.—And it is not according to law, as I understand the law on that subject.

Lord Justice-Clerk.—We need not discuss that, because I gave no such direction as that.

Mr Young.—I am going to ask your lordship to give the opposite direction, that if the jury are satisfied in fact that at the time when the deed was made the testator was of unsound mind, it is unnecessary to the invalidity of the deed that it should be attributed to any insane delusion existing in his mind.

Lord Justice-Clerk.—I don't think that is law. What I have told the jury is this —

Mr Young.—One moment, before your lordship disposes of it. It is the law which was laid down by the Lord Chief-Justice of England, in trying a similar case, which is referred to in one of the most famous speeches—I mean Lord Erskine's speech on Hadfield's trial, in which he is illustrating the grounds of the distinction between civil and criminal cases where insanity is brought into question. In the criminal court the act shall not be excused on the ground of insanity, unless it is attributable to an insane delusion; it shall not be enough that the mind laboured under insane delusions, unless the act in question was the fruit of an insane delusion. But the law is quite the reverse with reference to a man's civil acts. If the mind be unsound, which may be proved by a delusion, it shall not signify in the least degree that the civil act has no apparent connexion with it.

Lord Justice-Clerk.—I am quite with you upon that; and I will state that to the jury in my own way if you wish it.

Mr Young.—A single moment further, because I don't think we shall be much at variance. What I mean merely is, that if the mind is unsound, it don't signify that the act in question may have been quite understood by the party, and may not have been attributable to any insane delusion.

Lord Justice-Clerk.—I don't understand that last way of stating it. As you stated it before, I understand it.

Mr Young.—I forget my last words at this moment, but I daresay they will recur—that it is not necessary to entitle the pursuers to a verdict, that the jury shall be satisfied that the testator had not capacity to know what he meant in making that deed, and to express his purpose in intelligible language, and to understand the consequence and effect of what he did; but, only that they should be satisfied that at the time of making the deed he was of unsound mind.

Lord Justice-Clerk.—I won't give that direction.

Mr Young.—In short, what I mean is this, if he was of unsound mind, it don't signify that he quite knew what he was doing, that he quite knew the meaning of the language which he used, and that that language was quite appropriate to effect his purpose. An insane man every day knows what he is doing, has capacity to do it, and to know the effects of it; but still, if his mind be unsound, it shall have no civil consequences.

Lord Justice-Clerk.—I won't give that direction.

(Mr Young here handed the direction which he asked to his lordship.)

Lord Justice-Clerk.—I shall give the jury the first of these directions, but not the second. The direction which is asked of me is, that if the jury are satisfied in fact that at the time of making the deed the testator was of unsound mind, it is unnecessary to the invalidity of the deed that it should be attributed to any insane delusion existing in his mind. Now, the only objection I have to that direction is the use of the term ‘unsound mind,’ which has always appeared to me to be very vague. Gentlemen, what I tell you in that respect is this, and it is what I told you before. I did not think it necessary to lay it down to you as matter of law, because it seems to me too obvious to require to be stated as a legal principle or rule. If the testator, at the time of making that deed, was mentally incapable of making it—if his intellect was such as not to enable him to make that deed, then you will find for the pursuer, although there may be no insane delusion proved directly leading him to the making of the deed. If a man be in a state of mental incapacity to make a deed, there is no use saying anything more about it; it does not matter what insane delusions he may or may not have; because being, in fact, mentally incapable of making the deed, there is an end of the case. And with reference to the second direction asked, I shall not give it.”

ARTICLE II.—*Notice of some of the Cases treated in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh, during January 1862.* By THOMAS ANNANDALE, M.R.C.S. (Eng.).

THE variety of surgical cases occurring in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh is greater than that in most of the surgical clinics of Europe; and among the numerous cases treated here are many which, although scarcely meriting special publication, are yet of such a character, from being typical examples of particular classes of surgical diseases, or from illustrating sound principles or peculiarities of treatment, as to make a record of them very valuable to the practitioner, by affording him a guide to practice in the event of his meeting with similar cases. I have therefore, with Mr Syme’s kind permission, ventured to commence a series of Reports on a few of the cases which may present themselves from time to time in the Clinical Surgical Wards, and for which my friend Dr Pettigrew, resident surgeon in these wards, has afforded me every facility.

Painful Neuroma of Stump.

CASE 1.—J. N., æt. 35, admitted 16th December 1861. One year ago the patient had his left arm amputated through its upper third, for disease of the bone, at a provincial hospital in the north of England.

A few weeks after the stump healed, a small tumour began to form on its inner aspect, and the patient suffered frightful pain in the stump, and had a constant sensation as if the amputated hand was firmly clenched.

18th December.—Mr Syme cut out the tumour from the inner side of the stump. It was the size of half a walnut, and was found to involve two large nerves; only one small vessel required ligature.

13th January 1862.—The patient was dismissed quite cured of the pain and abnormal sensation, the wound being perfectly healed.

Remarks.—More serious operations, such as secondary amputations, have been performed for the relief of this condition, but Mr Syme, in his observations on this case, said that, unless there was some other defect in the stump, he had always found that the removal of the neuroma was effectual in curing the disease.

Fatty Tumour of the Shoulder, causing Weakness of the Arm and painful Sensations.

CASE 2.—A. S., æt. 30, admitted 2d January 1862. Ten years ago a tumour began to form over the acromial end of the right clavicle. It has increased in size very slowly, and for the last six years the patient has suffered from pains shooting up the neck and down the arm from the tumour. During the last year the pains have become much worse, and the arm, on that side, quite weak, preventing her at times from sewing.

6th January.—A fatty tumour, the size of a turkey's egg, was removed from over the clavicle by Mr Syme.

17th.—The wound is now almost healed. The patient feels the pain much relieved, and the arm is getting stronger.

Remarks.—Mr Syme has frequently called attention to the fact, that fatty tumours occasionally give rise to weakness of an adjoining limb, and to more uneasy symptoms than one would anticipate considering their structure and size.

During the preceding winter session several cases in the clinical wards of a similar nature to the one mentioned above, were treated by the removal of the tumour, with entire relief to the painful sensations and weakness.

Fissure of the Anus.

Several good examples of this disease have been treated in these wards during the last month, two of them deserving of special notice.

CASE 3.—The first, a man, J. B., æt. 38, admitted 12th December 1861.

Three years ago, while in the service of the Pacha of Egypt as an engineer, he began to suffer from attacks of dysentery, with pain after going to stool.

He has had no relief during all this time. Six months ago the pain after defecation became much more severe, lasting for many hours, and affecting his lower limbs. He had also a constant desire to go to stool, with a discharge of mucus.

One month ago he had a small external hæmorrhoid cut off, but without any good effect being produced.

On examination, Mr Syme found a small ulcer situated immediately within the sphincter ani muscle. A simple and small incision was made through the ulcer on the 12th of January.

14th *January*.—The bowels were opened to-day for the first time since the operation. The patient says he has not had such an easy motion from his bowels for three years.

18th.—Dismissed cured; the pain and constant desire to go to stool having entirely left him.

I had an opportunity of seeing this patient some weeks after the operation, and he remained perfectly well.

CASE 4.—The second case was a man, T. C., æt. 40, admitted 5th *January* 1862.

The patient has suffered for twenty years from the symptoms of this disease, his life during all this time having, according to his own account, been most miserable.

A few months ago the symptoms became much aggravated; he had severe pain after going to stool, which lasted for three or four hours, and sometimes for a whole day.

On examination, a small external hæmorrhoid was found immediately outside the sphincter, and at its base a fissure, which was extremely sensitive when touched.

9th *January*.—A small incision was made through the fissure, and the external hæmorrhoid was cut off.

13th.—The patient was dismissed cured.

Remarks.—The first of these cases is most valuable, in connexion with the symptoms simulating dysentery, namely, the constant desire to go to stool and the discharge of mucus,—symptoms which Mr Syme has described as occasionally occurring in this disease, but which, so far as I can learn, have not been noticed by any writer on the subject.

The fact of these symptoms being cured by the simple operation performed for the relief of the fissure, is the best proof that they depend on the presence of the fissure.

Another point in this case is the previous operation performed on the patient, namely, the excision of the small external hæmorrhoid. Mr Syme has always shown that the presence of a small external hæmorrhoid is merely the guide to a fissure of the anus, as the fissure usually lies at its base.

The second case is interesting from the long period of suffering endured by the patient, without obtaining any relief, and well illustrates the advantage of this most simple but effectual operation for the cure of fissure of the anus.

I had lately an opportunity of seeing, in Mr Syme's private practice, a lady, who had been two years under the care of an eminent surgeon in the north of England, for what was supposed to be cancer of the rectum, and who had been treated for the last twelve months by daily injections "per rectum," and taken a great variety of medicines, without the slightest benefit.

Mr Syme found that the symptoms depended upon a simple fissure of the anus. The usual incision was made through the fissure, and the patient returned to England a few days ago, perfectly cured.

Large Collection of Serum underneath the Scalp.

CASE 5.—A young man, æt. 22, applied for advice on the 9th of January 1862.

About two weeks before he was knocked over by an engine, and his head was bruised between the tender of the engine and the ground. The skin was not broken, but a large swelling formed on the top of his head, which has not increased, but rather diminished in size, since the accident.

On examination, a large swelling, the size of a small saucer, was found on the crown of his head. It fluctuated distinctly, and simulated to the touch a collection of pus.

Mr Syme saw the patient, and, considering it merely a collection of serum, ordered discutient lotions to be applied. These were diligently used, and when the patient returned at the end of a week the swelling was diminished one-half. He was ordered to continue the lotion and return in a few days. He again came back at the end of a week, and, on examination, the swelling had entirely disappeared, and the patient was quite well.

Remarks.—It is not often that collections of serum, the result of extravasated blood, attain such a size in this situation, and have such a favourable termination, as in the case above mentioned; and this is, I think, an excellent example of the advantage of sometimes delaying to make an incision into an accumulation of fluid, the nature of which is doubtful.

Compound Fracture through the Symphysis of the Lower Jaw.

CASE 6.—P. C., æt. 28, admitted 13th January 1862. A few minutes before admission, while grooming a horse, the animal threw out its hind legs and struck him on the mouth with one of its hoofs.

On examination, the lower jaw was found to be fractured completely through the symphysis, the left half of the jaw being displaced slightly inwards; the incisor and canine teeth of the upper jaw were knocked out, the upper lip was split as far as the septum of the nose, and the lower lip and chin were laid open to the extent of two inches, causing a wound which communicated with the fractured bone.

The edges of the wound in the upper lip were brought together by means of a hare-lip needle, and the wound of the chin and lower lip was united by a few sutures of silver wire. The displaced portion of the bone was then reduced, and a simple pad and bandage were applied underneath the chin, so as to support it.

30th January.—The patient being anxious to return home, was dismissed to-day. There is not the slightest deformity of the face, the wounds of the lips and chin are quite healed, and a considerable amount of union has taken place between the fractured ends of the bone.

Remarks.—Fracture through the symphysis of the lower jaw is a

very rare injury, owing, no doubt, to the great strength of the bone in this situation.

The slight displacement which was present was evidently due to the direct force which caused the injury.

In mentioning this case, Mr Syme referred to the simple treatment required for fractures of the lower jaw,—a bandage to support the chin and keep the teeth in contact being generally all that was wanted.

Mr Syme also showed that the use of plates fitting to the teeth, and other complicated means, was quite unnecessary, as the teeth of the upper and lower jaws fitted into one another, and if they were kept together, they formed the best method of securing the fractured ends of the bone in their place,—there being always some interstices between the teeth through which the patient could be fed.

Exostosis growing from the under surface of the Os Calcis.

CASE 7.—J. D., æt. 24, admitted 11th January 1862.

Last July the patient fell from a height of thirty feet, and alighted on his heels. He was treated in these wards for this injury, both ankles and feet being much bruised, but not otherwise hurt. Three months after the accident, the heel of the left foot became very painful, and the patient noticed that a small swelling was forming there. This has gradually increased in size, and now prevents him from walking.

On examination, a tumour, the size of a small marble, was found on the under surface of the left os calcis, about its middle. It felt hard to the touch, and was evidently an exostosis growing from the bone.

27th January.—To-day Mr Syme made an incision over the tumour, and having dissected the soft tissues from around it, removed it with the bone-forceps. The tumour was found to resemble the exostosis which grows from the extremity of the great toe.

13th February.—The wound is now nearly closed.

Remarks.—This case is interesting from the unusual site of the tumour.

Mr Syme stated that he had never before seen or heard of an exostosis growing from this situation.

It had the same structure as those small osseous growths which spring from the last phalanx of the great toe, being cartilaginous at its summit, osseous at its base, and the whole invested with a strong fibrous covering.

Mr Syme also observed that it was quite sufficient to remove the superficial part of these tumours in order to cure the disease, as they grow from this point, and not from the base.

Movable Cartilage in the Knee-joint.

CASE 8.—D. K., æt. 62, admitted 25th January 1862. Twenty years ago, a scaffold, on which the patient was working, fell, and

he injured his left knee and patella. After a few weeks he recovered the full use of the joint, which remained perfectly well until three months ago, when he again fell from a gangway a distance of two feet. He did not suffer at the time, but, two days after the accident, he noticed a small body, the size of an almond, slip out from under the patella to the inner side of the knee-joint, where it caused him much pain, and has since always done so when it has escaped from beneath the patella.

On admission, a movable cartilage, the size of a small almond, was found on the inner aspect of the joint, after the patient had walked up and down stairs for some time, in order to bring it from its usual position underneath the patella.

29th.—To-day Mr Syme, by a free subcutaneous incision, removed the cartilage from the interior of the joint into the tissues external to it, over the inner aspect of the head of the tibia; a simple bandage was applied round the joint, to keep the loose body in position.

3d February.—No inflammation has followed the operation; the cartilage remains where it was placed. Mr Syme made an incision over it and removed it. The body was the size of a horse-bean, and was composed principally of bone, with a thin layer of cartilage externally.

Remarks.—This case shows the safety of the subcutaneous method of treating loose cartilages of the knee-joint, provided the operation be carefully performed.

Compound Dislocation of the Ankle-joint.

CASE 9.—T. M'F., æt. 25, admitted 30th December 1861. Last night a large quantity of earth fell upon his left foot, and severely twisted the ankle, forcing the bone through the skin.

On admission, a compound dislocation of the ankle-joint was found to have taken place; the joint was much swelled, and through a transverse wound over the internal mæolus, about an inch and a half of the lower end of the tibia was projecting; it was tightly embraced by the margins of the wound, the skin being tucked in all round it; no fracture of the bones could be detected.

Mr Syme saw the case, and with the bone-forceps removed the projecting portion of bone, the wound being freely enlarged in the longitudinal direction to admit of this being done more easily. As soon as the bone was removed, a quantity of dark-coloured blood mixed with serum, which had been confined in the joint, flowed out.

For a few days after the operation the wound was not healthy in appearance, and the patient suffered considerable constitutional irritation; but at the end of this time some slough separated from the wound, and he improved in health.

25th January.—The wound is granulating nicely; but the patient complains of pain in the thigh corresponding to the affected foot.

1st February.—Since last date, symptoms of pyæmia have attacked

the patient. He still complains of his thigh, which is tender when touched, but no fluctuation can be detected.

7th.—The patient became rapidly worse, and died this morning.

At the post-mortem examination, secondary deposits were found in the lungs and spleen, and clots of blood undergoing softening were discovered in the inferior vena cava, in the iliac veins, and in the femoral vein on the affected side.

Remarks.—This case is a good illustration of compound dislocation of the ankle-joint, without fracture; and when we think of the strong ligaments that must be ruptured before this dislocation can be produced, it shows what great force is required to cause this injury.

The severe, and occasionally fatal, constitutional disturbance which follows compound dislocation of the ankle-joint makes the treatment of these injuries of the greatest practical importance. One cause for these grave symptoms appears to be, the tension of the parts; and for this reason there is no doubt that a free removal of the projecting bone is the only treatment which ought to be adopted if an attempt be made to save the limb. But it has been found that, when the bone is not interfered with, or even sometimes after it has been freely taken away, as in this case, that serious and even fatal results have happened from the accident; and it therefore becomes a serious question, whether amputation at the ankle-joint would not be the preferable treatment.

Amputation at the ankle-joint has the great advantage of being a safe operation, and causing comparatively little constitutional irritation; and certainly a good ankle-joint stump would hardly be inferior to a foot which must be stiff at the ankle. As it is our duty to save even a small portion of a limb, if we can do so without endangering life, I think it would only be right to attempt preservation of the foot, provided the nature of the injury and the patient's age and constitution were favourable for so doing.

But, on the other hand, if the patient is aged, weak, or of an unhealthy constitution, there can be no doubt that a primary amputation at the ankle-joint is the only safe means of treatment.

The accident having proved fatal in this case to a young man of apparently sound constitution, makes it still more evident that primary amputation is the safest operation for compound dislocations in this situation.

Cases of Abscess in the Perineum.

CASE 10.—J. B., æt. 51, admitted 21st January 1862. About one month ago the patient fell on his breech; after this he suffered from pain in the perineum, which was worse when his bowels were being opened. He had no difficulty in making water at this time.

Two weeks after this he caught a severe cold; the pain in the perineum became worse, and a swelling began to form there, which

has been increasing in size ever since, and, latterly, has caused him to have pain and difficulty when making his water.

On admission, there was a distinct bulging in the centre of the perineum, and Mr Syme detected fluctuation by introducing one finger into the rectum, another finger being placed over the tumour.

A free incision was made in the centre of the perineum, and a tablespoonful of pus evacuated.

30th January.—The wound is now almost healed. No urine has passed by the wound during the progress of the cure.

14th February.—The wound is now healed, and the patient suffers no pain from it.

CASE 11.—M. C., æt. 32, admitted 16th January 1862. Twelve months ago the patient was working as a blacksmith, and was much exposed to alternate heat and cold. He began to feel pain in the perineum, and noticed a swelling forming there. He had no difficulty in making his water. He did not apply for medical advice, but treated himself, by applying poultices to the swelling. At the end of six weeks it burst, and a pint of pus, mixed with blood, escaped. A few days after this he entered an hospital in England, where he remained thirteen weeks. Here he was treated by the application of poultices. A few weeks after entering the hospital, his urine began to flow through the wound in the perineum. A catheter was inserted into the bladder, per urethram, and kept in for six weeks, being changed once a-week; at the end of this time the wound still remained open, and an abscess formed in the scrotum.

The man left the hospital, the wound being unclosed; one month after he applied here for advice.

On admission, there was a fistulous opening in the perineum, through which urine and fæces passed.

20th January.—Mr Syme freely divided the septum.

27th.—The wound is contracting; the quantity of urine which passes through the opening in the perineum is diminishing.

13th February.—The wound is still contracting, but a small quantity of urine continues to come by the wound.

Remarks.—It is of the greatest consequence that abscesses in this situation should be treated early, by a free incision in the centre of the perineum, otherwise most serious and troublesome effects will result, by the formation of fistulous communications with the urethra, rectum, and the tissues around the perineum, as in Case 11.

In treating these cases, Mr Syme said, that wherever there were symptoms of difficulty and pain in making water, and the perineum was seen to be at all prominent, a careful examination should be made with one finger in the rectum and another placed over the tumour in the perineum, as this was the only certain means of detecting fluctuation, and that if the presence of matter was then ascertained, an incision, deep if necessary, should be made in the centre of the perineum. The first of these cases is a good

example of the successful termination of this disease, when properly treated.

The second case shows the bad consequences which result from not treating this complaint at its commencement. If the patient had applied for, and received, proper surgical treatment when the swelling in his perineum first appeared, there is little doubt that he would have escaped all subsequent distresses of the fistulous opening.

Protrusion of the Eyeball, simulating Malignant Disease.

CASE 12.—A. M'K., æt. 25, admitted January 29, 1862.—On the second day of this month the patient received a blow from a closed fist on the left eye. The eye and cheek immediately swelled very much, and blood came out from the inner angle of the orbit. The eye was quite closed for four days, and was treated with leeches, poultices, and warm fomentations. At the end of this time the eyeball protruded and a ring of red-looking flesh formed around the cornea, and gradually extended itself, so as to involve the whole anterior surface of the eyeball; all this time the patient suffered from violent pain in the eye and head. On the 20th the eye was lanced, and again on the 26th, blood and matter coming out after both operations, according to the patient's account, with only very temporary relief to the pain. On admission, the eyeball formed a tumour the size of a pigeon's egg; its anterior surface presented a fungus-looking mass of an oval shape, consisting of distended conjunctiva, and surrounding the cornea, which had almost entirely disappeared,—a small slough being all that remained of it. This fungus-looking tumour projected beyond the eyelids, both of which were much swelled and inflamed.

30th January.—The patient is suffering from agonizing pain in the eye and head. Mr Syme removed the fungous mass, together with the anterior third of the eyeball.

On examining the portion removed, the fungous mass was found to be connected with the conjunctiva, the cornea was quite destroyed, the lens and its capsule opaque, and partially absorbed, and the vitreous humour thickened and of a dull brown colour.

12th February.—The eye is now shrinking, and the patient is quite relieved from pain.

CASE 13.—A. M'T., æt. 4½, admitted January 30, 1862; with a fungous mass of a circular form and flattened on its surface, extending over both eyelids; there was also a small scrofulous abscess on the left forehead. The father of the patient gives a most intelligent history of the disease. He says, that when the child was four months old he could not see properly with his left eye; he observed that this eye was of a different colour from the other,—the diseased eye being brown, the healthy eye blue; the pupil of the diseased eye was also dilated, and the eye itself protruded more than its fellow. A few months after this the clear fluid of the eye became

dull and streaked with blood, the white of the eye then became inflamed, the cornea opaque, and the whole eyeball grew larger. This state of matters has been gradually progressing until six weeks ago, when the eye increased to the size of a hen's egg, and the cornea projected very much. The eyeball then burst, and a quantity of purulent matter mixed with blood came out; the eye diminished in size, and the child was relieved. A few weeks after, the eye again enlarged, and a fungoid tumour, which occasionally bled, projected from between the eyelids. The child was seen by two surgeons in the country, who thought the case quite hopeless.

31st January.—The child being very restless, and not allowing any one to come near it, chloroform was administered. Mr Syme found that the disease was confined to the eyeball, and that the tumour was pear-shaped, its neck being easily grasped by two fingers placed within the orbit. He considered that the disease was non-malignant, and therefore cut out the eyeball. On dissection, the tumour was found to be entirely confined to the eyeball; it was composed of a fungous growth which appeared to have sprung from the choroid coat. The whole interior of the eye was disorganized, the vitreous humour and lens had been absorbed, and all that remained of the cornea was a slough, through which the external fungus protruded. Microscopic examination showed no trace of cancer cells; but there were abundance of lymph and pus corpuscles, mixed with the pigment cells of the choroid.

14th February.—The child is now going about again, very much improved in health, the wound being almost entirely healed.

Remarks.—Both of these cases are interesting from their simulation of a more serious disease. The first case appears to have been a severe inflammatory attack of the whole eyeball: an example of a disease by no means common, but in this case most rapid in its progress. The swollen eyelids, and the red protruding conjunctiva, gave the eye at first sight a most formidable aspect. The great pain and tension of the eyeball, from which the patient suffered so much, required that something should be done to allow of the free escape of its contents, as the previous incisions had only very temporarily relieved these symptoms. Mr Syme, therefore, thought that the best treatment was to remove a portion of the anterior surface of the eyeball, and this was followed by speedy relief to the pain and the other symptoms.

The second case still more strongly resembled in appearance and history a malignant tumour of the eyeball. Mr Syme, however, on examining the eye and learning the history, at once pronounced it to be non-malignant, and most likely scrofulous in its origin, and directed attention to the abscess on the forehead. The disease seems to have commenced by the deposit of some substance in the choroid coat; most probably this substance was tubercular, and the abscess on the forehead tends so far to confirm this. Inflammation was the result, slow at first in its progress, but gradually leading

to disorganization of the structures in the eyeball, abscess of the globe, sloughing of the cornea, and the protrusion of the fungous tumour. As little more than the eyeball was removed at the operation, it may be expected that when the little patient recovers, a glass eye fitted into the orbit will have the movements of the original organ, and give to the face its natural appearance.

ARTICLE III.—*Report on the Causes of Death among the Assured in the North British Insurance Company, from the Commencement of the Business in 1823, up to 31st December 1860: being a period of Thirty-seven Years.* Communicated by JOHN G. M. BURT, M.D., F.R.S.E., Medical Officer of the Company.

IN making up this Report it may be observed—

1. That as this is the first investigation of the kind which has been made in connexion with this Company, it was found impossible to contrast the relative intensity with which the various diseases have contributed to the mortality during the later and earlier periods of the Company's existence, and the benefit therefore of a comparison between these periods has not been had.

2. There have, however, been published for some years the results of the experience of two other offices—the Scottish Widows' Fund and the Standard, as ascertained at the periods of the investigation into their financial position with the view of declaring a bonus; and the evidence derived from these Reports affords the means of usefully contrasting their experience with the experience of this Office.

3. The method of classification followed in this Report is that adopted by the Registrar-General in his Annual Reports; and in all cases where an individual has died from a disease supervening on another, the primary disease, if known, has been stated as the cause of death.

4. Up to the close of the year 1860, the total number of deaths among the assured has been 1303. The average duration of these lives on the Company's books is 10.66 years, and their average expectation, according to the Carlisle Tables, 25.07 years, so that they have fallen short of their expectancy on an average by about $14\frac{1}{2}$ years. This result is only what might have been anticipated, as during the earlier years of the business all those risks that emerged by death, occurred necessarily among those who had not reached the average duration of lives of their age at entrance; and even yet, from the rapid influx of lives, especially of young lives, a considerable proportion of the deaths must occur among those who have not lived out their expectation.

With these remarks, reference is made to the Appendix, showing

the various classes into which the mortality has been divided; the number of deaths in each class, the number of years which, on an average, the cases have been on the books of the Company, and the average expectation of each, according to the Carlisle Tables.

CLASS I.—Under Class I., comprising Epidemic and Contagious diseases, there have been 187 deaths, or $14\frac{1}{2}$ per cent. of the total mortality has been caused by these diseases. The mortality from the same causes experienced by the Scottish Widows' Fund, according to their last Report, coincides exactly with this, being also $14\frac{1}{2}$ per cent. Fever, as might be expected, contributes most largely to the mortality under this class, occasioning no fewer than 94 deaths. The average duration of the 94 on the Company's books was 8.48 years, and their average expectation 28.66 years. The majority of the risks emerged within 10 years of their entrance.

It is curious to note the professions and occupations followed by those who fell victims to this disease. Thus, merchants and shopkeepers contributed 16 deaths, clergymen 4, military officers 4, farmers 6, innkeepers 4, and those described as having no profession 10. The deaths among females were 6, and the rest were spread over writers, clerks, teachers, bakers, shoemakers, bookbinders, etc.

It will be observed that small-pox, which would have come under this class, has not a place in our mortality. This is the more surprising, as during the last few years it has been almost epidemic in some parts of the country.

CLASS II.—Under Class II., containing, according to the Registrar-General's classification, diseases of uncertain seat, there have been 130 deaths, or about 10 per cent. of the total mortality. In the Scottish Widows' Fund the percentage was only $6\frac{1}{2}$. The average duration of these lives was 10.26 years, and their average expectation 23.30 years. The large number of 46 deaths have resulted from dropsy, and this number would have been greatly swelled if all those diseases stated as having terminated in dropsy had been referred to this head; but, as before mentioned, all such cases were classed under the primary disease. As dropsy frequently results from, or accompanies heart, kidney, and liver diseases, it is probable that a considerable number of the deaths reported as arising from dropsy should have gone to increase the mortality under those other diseases. This is inferred also from the circumstance, that although in the Scottish Widows' Fund the total number of deaths is considerably greater, yet only 17 deaths are ascribed to dropsy.

The deaths from cancer were 25. They survived on an average 12.6 years, while their average expectation was 22 years. 18 males and 7 females fell victims to this disease. In the females it chiefly affected the breast, and in the males the stomach, tongue, and

rectum. In one case it is stated that the immediate cause of death was erysipelas following an operation.

Inflammation furnished 11, and mortification 12 deaths. The returns under inflammation are vague, not specifying the part affected.

Gout occasioned 6 deaths—3 noblemen, 2 private gentlemen, and 1 general agent. In four out of the six cases, gout had manifested itself at the time of acceptance, and an extra rate was charged in consequence. These lives on an average fell short of their expectation by 11 years.

CLASSES III AND IV.—Tubercular diseases, and diseases of the Respiratory Organs, which comprise Classes III. and IV., have contributed 284 deaths, or $21\frac{3}{4}$ per cent. of the total mortality. This is low as compared with the mortality from the same causes among the general population, which is stated by the Registrar-General to be as high as 30 per cent. Such a comparison, however, is scarcely admissible, as the majority of the lives assured are above the age at which consumption usually manifests itself; and besides, as is well known, the mortality from tubercular diseases among the general population is swelled by destitution, and by the unhealthy occupations of many classes of the community, which causes do not, to any great extent, apply to the assured.

In the Scottish Widows' Fund the proportion which diseases of the respiratory organs, including consumption, have contributed to the total mortality, is $20\frac{1}{2}$ per cent., and in the Standard a little more than 23 per cent.

Consumption, which contributes so largely to the general mortality, occasioned 107 deaths, or 8.21 per cent. of the total number. In the Widows' Fund, since the commencement of their business, the percentage is 7.8, and during the earlier period of the Society's existence it was as high as $11\frac{1}{4}$ per cent. While in the Standard, during the last quinquennium, the percentage was 10.8 of the total mortality, and during the previous period it was 14.2 per cent. And this mortality has taken place in these associations in spite of the very rigid rule which they adopt "of excluding as ineligible all in whose immediate family more than one instance of the disease has manifested itself."

Of the 107 deaths which have arisen from this disease, 6 emerged in the first year after acceptance, 3 in the second, 9 in the third, 12 in the fourth, 6 in the fifth, 9 in the sixth, 10 in the seventh, 11 in the eighth, 5 in the ninth, and 6 in the tenth year; so that of the total number 77, or about $\frac{3}{4}$ ths of them, succumbed within ten years from the date of their acceptance. The remaining 30 cases died after being on the Company's books from 10 to 26 years, which last period is the longest duration of any of the consumptive risks. The greatest mortality occurred between 40 and 50 (34 deaths),

although in the previous decade, 30 to 40, the number was nearly as great, being 32.

The average duration of the consumptive risks was 7 years 11 months, and their average expectation 30.64.

CLASS V.—The next class comprises diseases of the Brain and Nervous System. No fewer than 257 deaths, or 19.72 per cent. of the total mortality resulted from apoplexy, paralysis, epilepsy, inflammation of the brain, delirium tremens, and insanity. The diseases of the same class account for 22.4 per cent. of the deaths in the Widows' Fund, and for 20 per cent. in the Standard, during the last quinquennium. Apoplexy and paralysis appear to have been the cause of death in 172 cases. Of these 105 persons died from apoplexy, the average duration of whose lives was 10.18 years, and the average expectation 24 years.

Paralysis, which is chiefly a disease of old age, occasioned 67 deaths; and these lives showed a higher relative duration than those that fell victims to apoplexy, their average duration being 16.01 years, and their average expectation 22.37 years.

Delirium tremens contributed 11 deaths to this class of diseases. The average duration of these lives was 7.14, and the average expectation was 32.02 years; so that they did not survive on an average even a fourth part of their expectation. This low duration naturally leads to the conclusion that at the time of their acceptance some concealment must have been practised as to their habits.

CLASS VI.—Under the head of Diseases of the Organs of Circulation, 122 deaths have occurred, or 9.36 per cent. of the total mortality. In the Widows' Fund the proportion from the same causes from the commencement of their business has been 11 per cent.; and during the last septennial period, Dr Begbie reports the percentage to have been as high as $13\frac{1}{4}$ per cent., which he explains by the advanced age of many of the assured, and from the fact of chronic diseases of the heart being beyond all others the disease of old age. The deaths in the Standard, during the last quinquennium, from the same causes, were a little more than 9 per cent. of the total mortality.

The average duration of the lives that died of heart disease was 12.64, and their average expectation, 24.72 years.

CLASS VII.—The Diseases of the Organs of Digestion have contributed 135 deaths, or 10.36 per cent. of the total mortality. The percentage in the Widows' Fund was 12.39, and in the Standard, during the last quinquennium, nearly 17 per cent.

Disease of the liver has been the most fatal of this class of diseases, having occasioned 55 deaths. The average duration of these lives was 10.34 years; and their average expectation 24.89. Some medical gentlemen consider this disease to be to a certain extent

hereditary; and it might be a proper subject of inquiry how far there has been any evidence, in the experience of offices, to justify placing it in such a category.

CLASS VIII.—Diseases of the Urinary Organs account for 42 deaths, or 3.22 per cent. of the total mortality. Each survived on an average 11.17 years, while the average expectation was 20.6 years. The percentage in the Widows' Fund was 4.55 of the total mortality; and in the Standard, during the last quinquennium, it was 4.95 per cent. for the period.

CLASSES IX., X., AND XI.—The next three classes require no comment. They contributed in all only 12 deaths.

CLASS XII.—Deaths by violence compose this class. Suicide or accident account for 45 deaths, or nearly $3\frac{1}{2}$ per cent. of the total mortality. The average survivancy of this class has been very low as compared with the average expectation, 8.47 years to 28.82.

Very various has been the nature of the accidents which have occasioned these 45 deaths. 8 were killed by falls from a height; 8 by accidental drowning; 5 by accidents connected with travelling; 2 by falls from horseback; 3 by explosions; 4 by gun accidents; 1 killed in battle; 3 perished by shipwreck; 1 died of wounds received at a fire; 3 by an overdose of some poisonous mixture, whether taken intentionally or not was doubtful; and the rest from the result of injuries received in various ways.

CLASS XIII.—Under this class are included all those deaths which have been reported as resulting from old age. 49 deaths have been so returned; but from the circumstance of 5 of these having died under 70, and a considerable number about 70, it seems probable that the certificates in these cases have been carelessly filled up, otherwise some specific disease would have been stated as the cause of death.

The average duration of these lives was 17.34 years, and the average expectation 14.90 years.

Lastly, we have the large number of 40 deaths, in which the causes were not ascertained. The cases occur almost entirely at the commencement of the Company's business, and would, no doubt, could they have been classified under their proper heads, have modified to some extent the results arrived at in this investigation.

Since the Registration Act has come into operation in this country, the only difficulty that can now occur in ascertaining the cause of death is, where the party dies abroad; and even when this happens, it must be but very rarely that the information cannot be procured; so that in future such cases will, in all likelihood, disappear from our obituary.

TABLE showing the CAUSES of DEATH among the Assured in the North British Insurance Company, from the commencement of the Business up to 31st December 1860, with the Average Duration of Life after Assurance as compared with the Average Expectation.

Causes of Death.	Deaths.	Average Duration.		Average Expectation.	Percentage of Total Mortality.
		Yrs.	Mo.		
<i>I. Epidemic and Contagious Diseases—</i>					
1. Scarlatina,	5	6	10	38.73	.3837
2. Diarrhœa,	20	12	0	22.88	1.5349
3. Dysentery,	16	11	11	24.96	1.2279
4. Cholera,	16	8	6	26.74	1.2279
5. Influenza,	15	10	6	24.82	1.1512
6. Ague,	1	12	7	25.71	.0767
7. Fever (remittent),	8	6	1	30.07	.6139
8. Fever (continued),	94	8	6	28.66	7.2141
9. Erysipelas,	12	8	0	22.85	.9209
<i>II. Diseases of Uncertain Seat—</i>					
1. Hæmorrhage,	15	8	2	26.31	1.1512
2. Inflammation,	11	6	5	28.29	.8442
3. Dropsy,	46	8	7	21.89	3.5303
4. Abscess,	11	11	4	26.63	.8442
5. Tumour,	4	13	5	27.00	.3070
6. Mortification,	12	16	8	20.86	.9209
7. Cancer,	25	12	7	22.00	1.9186
8. Gout,	6	8	1	19.11	.4605
<i>III. Tubercular Diseases—</i>					
1. Atrophy,	8	16	7	27.92	.6139
2. Consumption,	107	7	11	30.64	8.2118
3. Hydrocephalus,	1	2	6	30.32	.0767
<i>IV. Diseases of Respiratory Organs—</i>					
1. Laryngitis,	3	9	6	18.05	.2302
2. Bronchitis,	59	13	11	20.56	4.5280
3. Pleurisy,	4	6	4	18.34	.3070
4. Pneumonia,	41	10	7	23.42	3.1466
5. Hydrothorax,	21	9	4	22.70	1.6117
6. Asthma,	6	15	4	20.73	.4605
7. Disease of Lungs,	34	9	4	28.95	2.6094
<i>V. Diseases of the Brain and Nerves—</i>					
1. Cephalitis,	15	7	6	29.63	1.1512
2. Apoplexy,	105	10	2	24.00	8.0583
3. Paralysis,	67	16	0	22.37	5.1420
4. Convulsions,	4	2	9	16.73	.3070
5. Delirium Tremens,	11	7	2	32.02	.8442
6. Epilepsy,	16	9	11	29.73	1.2279
7. Insanity,	3	14	1	30.60	.2302
8. Disease of Brain,	36	11	7	25.81	2.7629
<i>VI. Diseases of Organs of Circulation—</i>					
1. Pericarditis,	2	10	2	19.26	.1535
2. Aneurism,	17	9	10	26.49	1.3047
3. Disease of Heart,	103	12	8	24.72	7.9048
<i>VII. Diseases of Organs of Digestion—</i>					
1. Gastritis,	3	10	11	26.50	.2302
2. Enteritis,	13	5	6	32.26	.9977

Causes of Death.	Deaths.	Average Duration.		Average Expectation.	Percentage of Total Mortality.
VII. <i>Continued</i> —		Yrs.	Mos.		
3. Peritonitis,	5	11	6	25.23	.3837
4. Ulceration of Intestines,	7	10	11	29.49	.5372
5. Hernia,	3	21	10	24.79	.2302
6. Heus,	2	20	7	24.63	.1535
7. Hæmatemesis,	3	8	1	31.70	.2302
8. Disease of Stomach and Bowels,	27	8	10	21.57	2.0721
9. Hepatitis,	6	8	7	27.38	.4605
10. Jaundice,	11	11	6	23.49	.8442
11. Disease of Liver,	55	10	7	24.89	4.2210
VIII. <i>Diseases of the Urinary Organs</i> —					
1. Diabetes,	2	11	0	24.75	.1535
2. Disease of Kidneys,	20	12	3	23.57	1.5349
3. Disease of Bladder,	20	10	1	17.19	1.5349
IX. <i>Childbirth, etc.</i> —					
1. Childbirth,	5	7	3	33.15	.3837
2. Disease of Uterus,	1	10	2	27.61	.0767
X. <i>Rheumatism and Disease of Joints</i> —					
1. Rheumatism,	1	0	10	25.71	.0767
2. Disease of Joints,	1	5	5	25.09	.0767
3. Disease of Spine,	1	10	8	13.82	.0767
XI. <i>Disease of Skin and Cellular Tissue</i> —					
Carbuncle,	3	12	7	18.06	.2302
XII. Violent Deaths,	45	8	5	28.82	3.4540
XIII. Old Age,	49	17	4	14.90	3.7610
Causes not ascertained,	40	8	0	27.32	3.0699

ABSTRACT.

Causes of Death.	Deaths.	Average Duration.		Average Expectation.	Percentage of Total Mortality.
		Yrs.	Mos.		
I. Epidemic & Contagious Diseases,	187	9	4	27.19	14.3512
II. Diseases of Uncertain Seat,	130	10	6	23.30	9.9769
III. Tubercular Diseases,	116	8	10	30.44	8.9024
IV. Diseases of Respiratory Organs,	168	11	6	23.09	12.8934
V. Diseases of Brain and Nerves,	257	11	7	24.82	19.7237
VI. Diseases of Organs of Circulation,	122	12	3	24.80	9.3630
VII. Diseases of Organs of Digestion,	135	10	1	25.37	10.3605
VIII. Diseases of Urinary Organs,	42	11	4	20.59	3.2233
IX. Childbirth, etc.,	6	7	9	32.22	.4604
X. Rheumatism and Disease of Joints,	3	5	8	21.54	.2301
XI. Disease of Skin and Cellular Tissue,	3	12	7	18.06	.2302
XII. Violent Deaths,	45	8	5	28.82	3.4540
XIII. Old Age,	49	17	4	14.90	3.7610
Causes not ascertained,	40	8	0	27.32	3.0699
	1303	10	8	25.07	100.0000

ARTICLE IV.—*Cases of Poisoning by Goats' Milk.* By ALEXANDER E. MACKAY, M.D., F.R.S.E., Surgeon, H.M.S. Marlborough.

ON the 27th of November 1861, a very singular, and for a time sufficiently alarming, seizure attacked simultaneously some ten or eleven ward-room officers of H.M.S. Marlborough. Mr Williamson, acting inspector of machinery afloat, was in the Quarantine Harbour inspecting a despatch gun-vessel, when he was suddenly seized, about 10.30 A.M., with extreme faintness, nausea, violent bilious vomiting, and diarrhoea. The surgeon of the ship gave him a stimulant, but the depression was so great, that it was with difficulty he was brought on board this ship. On his arrival on board there was a recurrence, the extremities were cold, and he had cramps. At the same time Commander Brandreth, Lieutenants Gillett, Selby, Inglis, Pellew, and Hopkins, Mr Kiddle, master, and Captain Maskery and Lieutenant Messiter of the Royal Marines, were similarly affected. The same symptoms attacked myself also at the same time. In some the affection was comparatively trifling, but in others it was of great severity, especially in the cases of Messrs Williamson, Inglis, and Hopkins. The attack fortunately was only of five or six hours' duration. It was treated by the administration of hot water, to encourage free vomiting; this being followed by stimulants and anodynes, with, in one or two instances, the application of epithems to the abdomen. On the following morning a small dose of castor-oil was administered to each officer. No appreciable bad results followed this attack. At the same time that these officers were attacked, two gun-room servants and one man on the sick list were similarly affected. At nearly the very same hour of the day, a number of the gun-room officers of H.M.S. Agamemnon had a similar seizure. In one or two the attacks were even more severe than we had it in the Marlborough, and one young gentleman was confined to the sick list for two or three days in consequence of it. The James Watt, the Neptune, the Racoon, the Scourge, and the Firefly, had trifling seizures occurring at the same time, and chiefly amongst officers. In the Racoon, the attack, I believe, was confined to the engineer officers. I cannot speak positively either of the Scourge or the Firefly, as it is only from rumour that I have any grounds for believing that these ships were affected.

On seeing so many of my messmates struck down so suddenly and simultaneously, and all labouring to a greater or less extent under the same symptoms,—seeing, moreover, that the ship's company were not at all similarly affected, my impression naturally was, that our sufferings were attributable to some poisonous matter which had, in all probability, been accidentally mixed with some of the dishes we had partaken of at breakfast. On inquiry amongst the officers affected, I found that some had partaken of coffee, some of tea; some had eaten animal food of various kinds, whilst others

had been contented with an egg. There was no one article, in fact, of which all who were seized had alike partaken, with the exception of the milk, and it was to this at last that our suspicions were directed. I confess, however, that this article did not strike me as being open to suspicion, until I had heard it remarked that sometimes the goats on this island, from which animals almost all the milk used in the shipping is procured, are, if allowed to stray, or not carefully watched, very fond of eating a plant which imparts a poisonous character to the milk.

On making inquiries amongst Maltese of all classes, I find that there is a plant on the island, called in their language *Tenhuta* (pronounced *Tenaowta*), which is so well known for its poisonous qualities, that the word *Tenhuta* is employed amongst them in ordinary parlance as expressive of anything very bad. This plant the goats are not only exceedingly fond of, but there is an impression amongst the natives that it is a powerful galactagogue, and on this account it might be given by unprincipled tradesmen to their goats when there is a greater demand than usual for milk, which must, of course, be the case when there is a large force in the harbour. Dr Zerafa, the late Professor of Botany here, informs me that this plant is the *Euphorbia Paralias*, the common sea-spurge; and Dr Grech Delicata, the present Professor of Botany, says, that the *Euphorbia helioscopia*, and another species of *Euphorbia*, are exceedingly common on the island. These, he says, are the *Tenhuta* of the Maltese, and are greedily eaten by the goats.

A Maltese lady informs me that the usual custom in Maltese families of any station, is to keep the goats from which they obtain their milk in their court-yards, and that they are never allowed to stray out, or to feed on the ramparts, or usual feeding-grounds of the goats, on the island. She told me that on the very day of our seizure, it so happened that a family with which she is acquainted had for some reason been obliged to purchase their milk from the ordinary milkman, and that several of the members were seized with choleraic symptoms, which they at once attributed to the milk.

The Comptroller of Charitable Institutions, the Honourable J. N. Inglott, tells me, that so well acquainted are they with the deleterious properties of this plant upon the milk of the goats, that in the various contracts he makes for different institutions, he binds the milkmen to being especially careful that the goats are not allowed to stray upon pasturage of an unwholesome character. He says, however, that the Maltese milkmen know perfectly when a goat has eaten the *Tenhuta*, from the appearance of the milk, a small portion of which, poured into the hollow of the hand, and then spread out by the finger, shows yellowish streaks in it. Mr Inglott is of opinion that no milkman would willingly give this plant to his goats, as they invariably suffer much from it.

A puzzling circumstance connected with this seizure was the fact, that *all* the officers did not suffer, although all partook of

milk; and in the gun-room that morning one young gentleman drank a whole bottle of milk, and did not suffer at all. Neither did any of the gun-room officers, indeed; while two gun-room servants who had access to milk did. It so happened, however, on the other hand, that on that very forenoon a patient in bed in the sick bay, labouring under an irritable stricture, was seized with symptoms similar to those which affected the ward-room officers. On that particular morning, for some reason, there had been no general supply of milk to the sick bay, as is usually the case, and this man was allowed to procure some himself from the shore. He was the only man in the bay who partook of milk, and the only man who suffered. The severe case which occurred in the *Agamemnon* was in the person of a young gentleman who had breakfasted entirely on milk. Some months ago, Dr Sammutt, a Maltese medical gentleman, suffered most severely from an attack of a similar nature. He informed me, in fact, that it had nearly proved fatal to him. He has no doubt whatever of its having arisen from partaking of goats' milk; but he attributes the poisonous properties of the milk to the circumstance, that the animal from which the milk was obtained was labouring at the time under an abscess of the udder; and he thinks that some admixture of the pus gave the poisonous properties to the milk. Several families were affected on the same day by the milk from the same animal, but not in such a severe degree as Dr Sammutt. I think there can be little doubt that this also was a case of Euphorbia poisoning.

However difficult, then, it may be to account for the immunity from suffering which some who partook of milk enjoyed, I cannot myself come to any other conclusion than that it was to this cause that all the symptoms we suffered from were to be referred. I would merely suggest, that if the active poisonous principle resides in those yellowish streaks of which Mr Inglott speaks, and if they hold themselves so entirely separable from the bulk of the milk, as to be traced in the general fluid by merely spreading it out on the hand with the finger, it is quite possible that an unequal distribution of this matter may account for the very violent symptoms in one, the milder features of the seizure in another, and the total absence of all symptoms of poisoning in a third. I have been induced to draw out these notes, because I think the seizure is an exceedingly interesting one. They are almost verbatim a copy of what I have forwarded to the office of the Medical Director-general in my nosological return for the quarter ending 31st December 1861. It is very possible that similar attacks may have been reported before, but as I have not come across them in my readings, I have thought it as well to take it for granted that the matter has hitherto not been considered of sufficient importance to call for particular notice.

H.M.S. MARLBOROUGH, MALTA, 21st January 1862.

ARTICLE V.—*Case of Suppuration within the Peritoneum.* By
JAMES BRYDON, M.D., L.R.C.S.E., Hawick.

C. M., æt. 5, in the enjoyment of her usual good health, was, on the 5th June 1860, seized with severe pain in the region of the stomach, and copious vomiting of a greenish fluid. I was called to see her next day. The vomiting still continued, but she felt no pain anywhere, and there was no tenderness on pressure of the abdomen. Her pulse was full, and 120 per minute; tongue thickly covered with a white, moist fur; appetite quite gone; there existed considerable diarrhœa, with dark-coloured, foetid fæces. The urine was high-coloured, and, on examination, was found to contain a large quantity of bile. She had had no shiverings, nor felt anything wrong up till the moment of seizure. She was ordered—R Hydrarg. C. Creta, Pulv. Rhei āā gr. iv.

7th.—The vomiting has ceased, the stools have assumed a chalky colour, but the other symptoms continue as before.

10th.—I detected this morning a doughy feeling, with fulness of the abdomen, but could not be satisfied as to the presence of fluid in the peritoneum. In three or four days, however, the signs of ascites became unusually distinct, especially the percussion shock. The distension increased rapidly, but was attended with no pain, and little uneasiness, until the 24th, when she complained much of pain at the umbilicus, which now began to protrude. On the 30th it showed a white top, like an abscess about to open, which it did on the morning of the 1st July. It discharged at least two quarts of pus,—good, healthy, normal pus, as was proved by chemical reagents and the microscope.

In a short time the tongue became clean, the appetite to return, and the bowels to regain their natural state. For some time longer the pulse continued about 120, and the skin hot and dry, with other febrile symptoms. The discharge, always of healthy pus, continued for about a month after its first appearance. By that time she was quite convalescent, and rapidly regained her former strength, and has continued ever since perfectly healthy.

Remarks.—The most interesting point in this case is the source of the pus. The earlier symptoms, and, indeed, the continued absence from the stools of bile, point to great hepatic derangement. But nothing abnormal as to the size of the liver could, on the most careful examination, be detected, either before or after the discharge of pus; neither was there ever any pain or uneasiness, on pressure, over the hepatic region. Even supposing a hepatic abscess capable of existing without any of these signs, its opening into the peritoneum would certainly have been attended with much more marked, and in all probability fatal, symptoms.

I have known of cases, with a similar result, arising from fish-bones, pins, and other such foreign bodies, causing perforation of

the intestinal canal, and thus passing into the peritoneum. In the present case, had anything of this kind existed, it would undoubtedly have been detected, as all the discharge was most carefully examined. Was it, then, a case of simple idiopathic chronic peritonitis? No other conclusion seems tenable; and if such be the correct view, its course and termination were certainly very unusual.

Another point of interest is the possibility of diagnosing between pus and serum in the peritoneum. In the present case, the only peculiarity remarked was the great force of the percussion shock. Pus is a denser fluid than serum, and would cause a stronger shock; but whether of sufficient intensity to be of use in diagnosis is doubtful.

Part Second.

REVIEWS.

The New Sydenham Society. Publications for the year 1861.

Vol. I. *A Year-book of Medicine and Surgery for 1860.* Pp. 578.

Vol. II. *A Volume of Selected Monographs*; including Papers by Czermak, Dusch, Schroeder Van Der Kolk, Radicke, and Esmarch. Pp. 329.

Vol. III. *The First Volume of Casper's Forensic Medicine.* Translated by Dr G. W. BALFOUR. Pp. 317.

Vol. IV. *Fasciculus of the Atlas for Skin Diseases*; comprising Plates from HEBRA, illustrating Psoriasis diffusa, Ichthyosis, Lupus serpinosus, Alopecia areata.

WE are glad to find, from its last annual report, that the New Sydenham Society continues in a flourishing condition; but, indeed, it deserves to be so; for, whether we look to the character of the works it has furnished to its members during the past year, or to the regularity with which these publications have been issued, it cannot be denied that the promises made in the original prospectus have been amply fulfilled.

The Year-book of Medicine and Surgery for 1860 presents a considerable improvement over its predecessor for 1859. To give some idea of the number of references it contains, and of the amount of labour involved in its production, we may state that the index alone occupies upwards of eighty closely-printed pages. And the very multiplicity of references leads us to remark that the notice of the current English medical literature appears to be somewhat overdone. The headings of a very large number of papers are given,

of which no abstract or notice is attempted, and of which, we doubt not, no abstract would be desirable. It seems to us a mistake to burden the volume with references to single cases of no particular interest, which do not illustrate any special principle. By retrenchment in this respect, space would be gained for more detailed notices of really important contributions. We are aware that the editors have a delicate and difficult task to perform; every man naturally thinks his own contributions important, and we can well believe that there is no lack of letters complaining that important communications have been overlooked. Still, we should like such a volume as that now before us to contain references to those papers only which advance in some respect the science or practice of our profession.

The second volume is one of a class which will be particularly valuable to the members of the society. It is headed "Selected Monographs," and contains translations of five papers on subjects of practical and scientific interest. The issuing from time to time of translations of valuable monographs, we regard as one of the most important duties which the Sydenham Society can perform. Without a knowledge of what is going on on the Continent, especially in Germany, no man can keep up to the level of his profession; but the keeping up of this knowledge, even to those who have at their command the resources of well-appointed libraries, is no easy task, while to residents in the country it is in the vast majority of cases simply impossible.

The first paper in this volume is a treatise on the laryngoscope, by Professor Czermak of Pesth. Liston and Garcia had already recognised the possibility of examining the larynx in the living; but, from the incompleteness of their method, and the difficulty of its application, their observations had led to no practical results. Czermak began his laryngoscopic studies in 1857, and in the following spring made a communication on the subject to the Imperial Society of Physicians of Vienna. Attempts have been made, but we think unsuccessfully, to dispute his priority in the application of the laryngeal mirror to diagnosis. The paper before us gives a full and intelligible account of the construction and mode of employment of laryngoscopic instruments, and contains some interesting physiological and pathological observations. The laryngoscope is, we doubt not, destined to become an important aid to diagnosis; and the translation of Professor Czermak's little treatise will be received as a valuable contribution to English medical literature.

Dr Whetley furnishes a translation of Professor Dusch's paper on Thrombosis of the Cerebral Sinuses. The professor divides cases of this condition into three classes: cases in which the coagulation depends on inflammation in the neighbourhood of the sinuses; cases where the calibre of the sinuses has been diminished, in consequence of the intrusion of foreign bodies and of compression; and those cases where the thrombosis has been occasioned by debilitating

influences. At present, when so much attention is being directed to embolism, and the so-called metastatic deposits, this paper will be read with much interest.

Professor Van Der Kolk publishes, through the medium of Dr Moore, a very remarkable case of atrophy of the left hemisphere of the brain, with coexistent atrophy of the right side of the body. The case, most carefully recorded, is illustrated by well-executed lithographs, and forms a valuable contribution to cerebral physiology and pathology.

Professor Radicke's paper on the importance and value of Arithmetic Means is peculiarly appropriate at the present time. Almost everything is now-a-days reduced to figures and statistics, but there are few who really know what conclusions may legitimately be deduced from them. In particular, numerous sets of experiments have been instituted with a view to determining the influence of various agencies, such as baths, or medicines, in the metamorphosis of the tissues. An individual is submitted during a given time to the influence of the agency in question, and the amount and quality of the excreta are carefully noted. The data so obtained are then compared with those of a second series of days, during which the mode of life is as nearly as possible the same as during the first series, with the exception of the absence of the agency under investigation. It is Professor Radicke's object to show that the deductions drawn from these experiments are in most cases utterly valueless, because disturbing causes are constantly in operation, which produce a much greater influence than the subject experimented upon, and for which no allowance is made in stating the results. The paper must be carefully studied; for, although the subject has been simplified so far as possible, it is still of a more abstract character than the writings usually addressed to the medical profession.

The last paper in the volume, "On the Use of Cold in Surgery," is by Professor Esmarch of the University of Kiel. In the opinion of Professor Esmarch, cold is the most powerful antiphlogistic remedy; so much so, that he states, "Without this remedy I would rather not be a surgeon." The method recommended for the employment of cold consists in the application of bags of vulcanized india-rubber filled with ice, snow, or some freezing mixture. One advantage possessed by these bags over bladders is, that they are bad conductors of heat; hence there is no danger of too sudden abstraction of heat, which in the case of ice-bladders sometimes leads to frost-bites. Professor Esmarch records a number of cases in which various injuries and inflammations, as well as cases of acute rheumatism, were treated by cold applications, continued in some cases during many weeks.

Professor Casper has long had a European reputation as a medical jurist, and the favour with which his writings have been received on the Continent makes it surprising that no translation of his great work had sooner appeared in this country. The Sydenham Society

has, in our opinion, acted very judiciously in selecting this work for publication; and Dr George Balfour, to whom the translation was intrusted, has performed his task in an able and satisfactory manner.

The present volume contains the thanatological division of the work—that, namely, which embraces a consideration of the various questions which may arise in the course of examining a dead body. It consists of two parts, the first, or general division, treating of various general questions, such as the signs of death; the mode of determining the period of death; the method of examining the dead body, the clothes, and the weapons supposed to have been employed; and the method of drawing up the judicial report.

The second, or special division, considers the forms of violent death under the headings, Death from Fatal Mechanical Injuries, Death from Gun-shot, Death from Burning.

Under these different heads an immense amount of valuable matter will be found; and a circumstance which gives the work a peculiar value is, that it is founded almost entirely upon the author's personal experience, and that all the principles laid down are established or illustrated by instructive cases or well-devised experiments. We would direct particular attention to one very valuable chapter, which embraces a series of cases where death resulted from violence, but where no marks of violence were traceable externally. It has been long known that important internal organs might be ruptured without any external mark being visible, but such cases have always been regarded as exceptional; whereas Casper maintains that the actual truth is precisely the reverse, and he lays down the general principle, "that it is the rule in all such injuries as are followed by *instant or very sudden death*, particularly in all cases of rupture of internal organs, proving rapidly fatal from internal hæmorrhage, for the body to *exhibit no external appearance of violence*, presupposing, of course, that the origin of the injury be not of itself of a penetrating nature, as a gun-shot, etc., because during the short remaining life of the wounded person there is no time for the production of ecchymosis." The illustrative cases afford examples of fractures of the ribs, skull, vertebræ, and sternum; of ruptures of the spleen, liver, lungs, and pulmonary artery; and of lacerations of the brain, spinal cord, and pericardium, where there were not the slightest external marks of violence.

The details of a Prussian medico-legal examination are, as might be expected, from the bureaucratic character of the government, of a somewhat complicated nature, but they present features which might be introduced with advantage into the proceedings on similar occasions in this country. No one, it must be premised, can take part in Prussia in a judicial investigation until he has passed a special examination, and has obtained an appointment as forensic physician or surgeon. The examination of the body must be conducted according to a certain method, for which minute directions

have been laid down by the Royal Scientific Commission for Medical Affairs, and which have been recognised by the authorities as binding upon all forensic inspectors. During the progress of examination the physician dictates to the presiding legal official a statement of the appearances met with, and to the resulting document the term *Minute of Dissection* (*Obduction's Protokoll*) is applied. To this minute is appended "The summary opinion," in which the medical jurists state shortly, and without scientific reasoning, their opinion as to the result of the dissection, especially their opinion as to the cause of death, whether the fatal result was due to violence or natural disease; and if to violence, in what way the violence was applied. In many cases the task of the medical inspectors end here. They may have been able to give an opinion which coincides so well with the ascertained facts of the case, as to make a farther prosecution of the inquiry unnecessary. But in the event of there being any difficulty, the judge calls upon them for a "reasoned opinion" (*Obduction's Bericht*), in which, after an historical relation of the facts of the case (for it must be stated that the documentary evidence is generally laid before the inspectors), and a recapitulation of the results of the examination of the body, they are bound to support all their conclusions by scientific reasoning, and to return answers to any questions which may have been proposed to them by the judge. Should the medical jurists not agree with one another, should they express their incompetence to give a decided opinion, or should the judge have a well-founded doubt as to the correctness of their conclusions, the matter is referred to the medical college of the province, and, if necessary, to the Superior Medical College at Berlin. There can be no question as to the immeasurable superiority of this system over that followed in this country. In Prussia no one is allowed to take part in a medico-legal examination until he has proved his competence to undertake the duty; in this country the most important and most difficult investigations may be confided to men who have no special knowledge of morbid anatomy, and who may not have dissected a body from the time of their student-days. In Prussia, in all doubtful cases, the points at issue are referred to a central scientific board, who sit as a jury upon the medical part of the testimony; in this country the most delicate medical questions are constantly referred to a common jury, and that in the face of the most conflicting evidence on behalf of the pursuer and defender.

No doubt a jealousy of any interference with the great institution of trial by jury is the cause of the mode of procedure in this country; but such jealousy is altogether out of place; and we are confident that trials would be conducted with far greater fairness both for the crown and for the prisoner (as well as in many civil suits), if the professional questions which are constantly arising, and which can only be satisfactorily replied to by trained medical men, were remitted to an independent and impartial board. In

this way also those scenes would be avoided which have done more than almost anything else to degrade the profession, and to bring medical evidence into contempt, in which a certain number of experts are produced to maintain one opinion, and an equal number come forward to swear the exact opposite, and in which medical men appear, not as impartial and scientific witnesses, but as paid and unscrupulous partisans.

We can with great confidence recommend to our readers Casper's admirable work; without a careful perusal of it no one should undertake a medico-legal examination, or should appear to give evidence in a court of justice.

The last of the publications for the year is the second Fasciculus of the Atlas of Skin Diseases. Regarding this it will be sufficient to say, that it contains well executed reproductions of four of the plates in Hebra's magnificent work.

The Physical Examination of the Chest in Pulmonary Consumption and its intercurrent Diseases. By SOMERVILLE SCOTT ALISON, M.D. Edin., etc., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. London: Churchill: 1861. Pp. 447.

THIS is a very excellent and a very honest book. There is a completeness and a genuineness about every line of it that entitles it to our highest praise, even although we feel obliged to admit to ourselves that it never can be, in its present form at least, a manual of diagnosis for the more superficial of students, and the less instructed of practitioners. There is a certain exaggeration of details, so to speak, a certain encyclopædic working out of every branch of the subject, which must appear very complex, and perhaps even unintelligible to a man of scanty personal experience, or of imperfectly-studied experience. So that we think Dr Alison will have to rewrite and condense his book, if he wishes it to prosper as a speculation in the matter of paper and printer's ink. We are not sure, indeed, that he has ever contemplated such a fortune for his laborious investigations, and in this case we can freely desire and anticipate for him the reward he expects; he will assuredly have the thanks and the just appreciation of all who, in hospitals and elsewhere, make the accurate examination of disease the business of their lives, having regard less to immediate advantage or personal convenience, than to the conscientious discharge of duty, and the attainment of secure convictions.

Dr Alison is known to the profession through many original researches, and especially through his contributions to what may be called the *acoustics* of physical diagnosis, both theoretical and

practical. He has invented a number of new instruments, on the merits of which we are hardly competent to pronounce an opinion, but of which we are disposed to think that one, at least, will survive the period of novelty and curiosity hunting. The double stethoscope is a real and positive gain to the auscultator, enabling him in some instances to obtain indications which could hardly be obtained otherwise. It will not, we think, supplant the old stethoscope, any more than will Dr Camman's instrument on which it is founded. Such, at least, is our experience of both. Simplicity of structure, if it will do the work at all, always carries the day in the long run over complexity and *unhandiness*; and none of these bin-aural stethoscopes can be said to be convenient as an instrument to carry about and apply habitually. But Dr Camman's instrument merely aims at making the ear apprehend differently, perhaps on the whole better, at all events more loudly and emphatically, the same facts in the same combinations as by the ordinary wooden tube. Dr Scott Alison's, on the other hand, by means of the two points of application to the chest, gives us at least new combinations of facts; compares one point with another at the same instant of time; often, or at least occasionally, a most important and valuable addition to our resources. We hardly know what to say as yet of the ultimate practical value of this instrument; but we can speak to having been able to illustrate by it the diagnosis of certain conditions of the chest in a very satisfactory manner. Still more difficult is it to speak confidently of the use of the sphygmoscope or pulse-measurer; the chest-goniometer or measurer of the angles of inclination of different points of the surface; the water-stethoscope or hydrophone; but on all these new instruments of Dr Alison's invention, and on all others of all other men's invention as well, the most complete and the most novel information may be obtained in this volume.

It is not, however, as a describer or even inventor of instruments that Dr Alison has our highest commendations, but as an investigator of morbid phenomena. And without in the least degree depreciating the numerous and excellent works which treat, more or less in detail, of the diagnosis of phthisis, we can at once say that in some respects there is none of them comparable to this one. It has been the fortune of the Brompton Hospital to give rise to at least one other manual of rare excellence; the little volume of Dr Payne Cotton on "Phthisis and the Stethoscope." But these two books on the same or nearly the same subject by no means interfere with each other. In Dr Cotton's work we have physical diagnosis in the highest state of simplification and clearness in which it can be presented to the uninitiated by a thoroughly instructed and highly generalizing mind. In Dr Alison's we have physical diagnosis worked out in detail, in all its turnings and windings, and with due regard to all its special difficulties and fallacies in particular cases. In both, we have the matured convictions of two perfectly single-minded and trustworthy physicians,

long engaged in directing their observations to a particular object. And each of these works is unique in its kind—Dr Cotton's as a guide to the beginner, Dr Alison's as a guide to the finished student. We are not, either on principle or in fact, advocates to a great extent of special hospitals; nay, we are very sensible of their evils and dangers. But if we wished to place the materials of a defence of special hospitals in the hands of their supporters, we should point to these two works, so full of true science, so entirely devoid of pretension and *quackishness*, and indeed of all the faults usually attributed to *specialism*. Of special hospitals, indeed, as of all other things, it may be said that there is a good and a bad side; and perhaps the only real test is this, "By their fruits ye shall know them." So judged, the Brompton Hospital can assuredly well justify its existence.

And yet we have, after all, our little critical differences with Dr Alison; and strange to say, they obtrude themselves more in the very first sentence of his book than in any subsequent chapter or even section in it. Perhaps it is almost a necessity of the case that an author may be expected to worship his subject a little overmuch. Yet the following statement, admirable as it is in detail, and thoroughly indicative of a rare mastery of the subject, is to us simply *wrong*, or rather an inversion of the truth as we see it, with respect to the *precedency* of symptoms and physical signs (commonly so-called) in consumption:—

"If the question were proposed to me, whether, in the case of a patient supposed to suffer from pulmonary consumption, I would be disposed to regard as the more decisive of the question, evidence afforded by symptoms, or that given by the physical signs ascertained by the examination of his chest, I would reply, that I should much prefer the physical signs as the grounds upon which to form my judgment. The symptoms of pulmonary consumption are much more the symptoms of other diseases, than the physical signs of pulmonary consumption are those of other maladies. The short cough, the frothy scanty sputum, the slight shortness and quickness of breath, the quickened pulse, the debility and languor, and the loss of weight, which are the symptoms of pulmonary consumption in its first stage, are not uncommonly the symptoms of other diseases, such as bronchitis, bronchial or tracheal or laryngeal irritation, dependent upon, or connected with gastric, hepatic, or even uterine irritation, and general decline of health. On the other hand, the dulness, or flatness, or shortness of the percussion note; its loss of symmetry, so to speak; the harsh or quasi-tubular inspiration, perhaps divided, with its dry crack and click under the clavicles; the coarse prolonged expiration, with or without its fine crumpling bruit; the defective elevation or expansion of the upper and front part of the thoracic cone, on both sides, or what is stronger, on one side; the strong vocal resonance and fremitus deprived of its relative proportion of one degree more on the right than on the left side; and the systolic bruit of the pulmonary and subclavian arteries, at the same time that other parts of the chest evince the usual characteristics of healthy vesicular breathing, and the heart is free from morbid sounds,—are seldom present without tubercular deposit in the lung.

"The symptoms of pulmonary consumption are more variable in their accession than the physical signs; some, or even many of them may be nearly or altogether absent, during the whole course of the disease. They may escape the attention of the patient, or from motives of interest, or from self-deception;

he may deny their presence. Though once experienced, they may absent themselves, and leave no trace behind. It is different with physical signs; they are very regular in the order of their succession; they are generally all found to lend confirmation and strength to each other; they cannot be denied by the patient, and they are little liable to vanish, or if they do disappear, they are succeeded by other signs well known to be their successors, and still more demonstrative of the nature of the disease. The worst symptoms of advanced phthisis often present themselves unpreceded by scarcely a symptom which has attracted notice; but we know of no cases of this disease marked by advanced signs unpreceded by the preliminary ones just noted.

"If such be the comparative value of the symptoms and the physical signs of phthisis in its first stage, what shall we not say of the greater value of the signs in the latter stages of the disease? The cough, emaciation, sweatings, and quick respiration, the hæmoptysis of advanced phthisis, are simply as suspicions to the modern physician, compared with the moist crepitation, the dull percussion, the gurgling, the cavernous respiration and cavernous voice, which are as so many certain proofs. When the wasted, coughing, panting patient is seen by the physician, he desires at once to examine the chest before deciding upon the nature of the disease. He is far more desirous to learn the physical signs in such a case than he would be in another case to acquire the symptoms, when he has already learned that the physical signs above noted are present. When the physical signs are manifested to his senses, the symptoms, so far as the nature of the case is concerned, are now of little value, however truly important they may be in respect of the relief of the patient.

"Yet it must be admitted, that in a large number of cases of phthisis, at an early period of the first stage, there is much reason to confess that physical signs are little developed. Numerous examples of phthisis, at an early part of the first stage, present themselves without our being able to detect physical evidence that can be held to be decisive. Even in examples of the disease of some months' standing, occurring in my own practice, physical signs have been so ill-marked as to have justified suspended judgment, and it has been only by means of subsequent evidence, that a decided conviction could be arrived at, that the disease was all along pulmonary consumption. It is at the early part of the first stage chiefly, that the defective development of physical signs is thus found to render diagnosis difficult."

We desire, of course, to advance our opinions without undue dogmatism, and with all respect for Dr Alison's long familiarity with the subject; but we think that this, though very good as a description, is in reality bad teaching. To us the *symptoms* are still, and must ever be, the *great facts* of consumption; the first facts of diagnosis in most cases; the first and the last facts in all cases as regulating treatment. Any method of teaching, therefore, and any statement of opinion which has a general tendency to degrade these to a secondary rank we must look upon with suspicion, and it would not be difficult, we think, to show that the admissions in the last paragraph of this quotation entirely neutralize the claim advanced in the first. It is quite true that physical signs present an easier, a far more rapid, and in some instances a more decisive diagnosis to ears familiar with them than the older facts; but no admission of the value of physical diagnosis ought, we think, ever to go beyond this. To disregard general symptoms is the sure mark of an imperfectly trained and possibly a blundering physician, and we do trust that Dr Alison, who very plainly does not so disregard them, will reconsider the effect of such teaching as this upon the

rising generation of physicians. Physical diagnosis, indeed, though difficult to learn thoroughly, is fatally easy to apply after a fashion. We are very sure that for one error from relying too much upon general symptoms, we could point out twenty arising from an exaggerated or exclusive attention to râles, and vocal resonance, and dull percussion. And if it is said that this only applies to *bad* physical diagnosis, and forms no argument against *good*, we admit it; but at the same time remark that general diagnosis is also entitled to a like admission, and that the general symptoms, *carefully studied*, almost always lead to the inference of phthisis both earlier and more surely than the physical diagnosis of what is called the first stage. We think, therefore, that no error can be more pernicious than to depreciate these symptoms. By so much the more as they are difficult of appreciation in some cases, it is our duty to study them carefully and constantly; not for the purpose of decrying physical diagnosis, but in order to exalt its special utility and give it a right direction and additional certainty.

With the exception of this slip at the commencement, we find almost nothing to criticise unfavourably in Dr Alison's book. Any analysis of it here is out of the question. In a work which is itself simply the inductive analysis of a vast number of facts, which supports no peculiar theory, and advocates no peculiar or novel practice, there is no room to do anything but to direct the reader's attention to it, and to exhort him to place it upon the shelves of his library. The peculiar excellence of Dr Alison's book is its fitness to illustrate emergencies and uncommon conjunctions of facts. The great development given to individual details makes the book difficult to read, as we daresay it was difficult to write; but it is, or ought to be, a magazine of information constantly at hand. We have tested it on a number of very critical points, and in almost every instance have found something beyond the common run of observation, and something which our individual experience assures us is good and sound. And with this remark we take our leave for the present of the author, hoping often to meet with him again.



Medical Climatology. By R. E. SCORESBY-JACKSON, M.D., F.R.S.E.
London: Churchill: 1862. Pp. 509.

In these days of easy locomotion, foreign travelling in search of health is a very different matter from what it was thirty years ago. At that time a voyage to Madeira, or a journey to Nice, was a really formidable undertaking. Tossing about for weeks in a sailing-packet, or being jolted over a thousand miles in a post-chaise or diligence, was a severe ordeal for an invalid who found an English winter too much for him. But as Sganarelle says, "Nous avons

changé tout cela." A few days' voyage in a comfortable berth of one of the Royal Mail Packet Company's Steamers, or a comparatively unfatiguing journey in a first-class railway carriage, brings the traveller to his destination in better health probably than he was on starting, and prepared to profit at once from his change of residence. The number of invalid travellers has consequently increased a hundredfold, and with this increase has arisen a new department of medical literature. Formerly, descriptions of watering-places and health-resorts were local publications, and had only a circulation among the visitors to the localities described. Now-a-days, books are constantly issuing from the London press, the object of which is to attract visitors to all the ends of the earth.

In classic days every spring had its Naiad, every grove its Dryad; in modern times it is a poor spa which has no one to enlarge upon its virtues, a very second-rate health-resort without an author to chronicle its cures.

Allowing for a certain amount of *couleur de rose* in the description of the scenery, and in the enumeration of the virtues of its waters, most of these books may be depended on; and, had the patient or his medical attendant time and patience to read them all, he might at length have some idea as to what locality was best suited for his particular case. But the very richness of this kind of literature becomes embarrassing; where there is so much to choose from, the difficulty of selection is enormously increased. In the good old days there was nothing of this kind: an attack of gout immediately suggested Buxton or Wiesbaden; ideas of Harrogate or Aix-la-chapelle were evoked by a troublesome cutaneous eruption; Cheltenham or Carlsbad lay before the sufferer from disordered liver; a course of chalybeate mineral waters was synonymous with Spa or Tunbridge Wells. A general guide is now more necessary than ever, one which shall bring together in a clear and compendious summary what is known regarding the numerous health-resorts, and shall state in an impartial manner the merits and disadvantages of each. Such a work it has been Dr Scoresby-Jackson's object to supply, and in the accomplishment of his task he has been eminently successful.

The first four chapters of this work are of a general character, and treat respectively of the causes of physical climate, of hygienics, of mineral waters, and of change of climate as a remedial agent. They contain much sound information adapted both for the professional and non-professional reader; but though they may be perused with advantage by the latter, they do not attempt to teach him to doctor himself; on the contrary, they tell him nothing but what a well-informed man should not be ignorant of, and for all medical details he is referred to his professional adviser. "I have written this book," says Dr Jackson, "for the accommodation of professional men, and I do not intend it, except, perhaps, in rare instances, to be used as a *guide* by the invalid; he will, if he rightly

understand his own welfare, be subject only to his own medical adviser. This principle I have endeavoured to inculcate upon non-professional readers at every opportunity throughout the work; and it has been simply with a view of avoiding circumlocution, that I have seemed in many instances to address my remarks immediately to the invalid himself."

The remainder and much the larger part of the work is devoted to a description of the various health-resorts in the different parts of the world. A considerable part of Dr Jackson's information has been derived from personal experience, while information as to the places he has not visited has been obtained from every available source. We are told in the preface that the scheme of the present work was projected six years ago, and that the author has read every work upon climate and cognate subjects that he could procure. From this statement our readers may judge of the pains which have been taken in the composition of this volume, and we can assure them that with regard to the various localities described, they will meet with full and trustworthy information.

As an example of Dr Jackson's style we quote a passage in reference to Algiers, in which a principle too often neglected is wisely insisted on:—

"As a resort from the inclement seasons of northern Europe for persons threatened with pulmonary consumption, Algiers, in my opinion, is deservedly in good reputation. The climate is far from being of a relaxing character; on the contrary, it combines with its usual mildness and equability a decidedly bracing and tonic influence. Consumptive patients, in whom there is a well-marked deposit of crude tubercle, may pass one *or more* winters in Algiers with advantage, under circumstances which afford Nature the most ample leisure for repairing the disorganized structure. The sooner the patient is placed under its influence the more likely is the result to be beneficial. But when the disease has gone beyond what I have mentioned,—when the tuberculous deposit has broken down and softened, and when the patient is obviously sinking rapidly under the malady,—Algiers is not to be recommended. I saw two persons die there who should never have been allowed to leave the comforts of their own homes. The first case was that of a gentleman who, I am persuaded, had no idea of his dangerous condition when he was sent there; and he died without a friend to soothe his last moments, and with no one to speak to at all except those whose acquaintance he had made subsequent to his arrival in the place. The second was that of a lady who was comforted by the presence of a near and dear relative; but in her case, also, the change to Algiers only served to hasten the approach of death. Neither of these cases should have been sent away from home; it was an indubitable act of cruelty to recommend the change alike in both instances. Consumptive patients frequently crave for change of climate only when it is no longer available in the cure of their disease. Careless at first, although eager at last, they rarely seek of their own accord the benefits derivable from this therapeutic agent when it would advantage them. Frequently the physician is not consulted until the time is overpast when resoration to health by such means might have been effected; and then it behoves him stedfastly to refuse his sanction to a removal which would but add another grave to one of those foreign cemeteries, visited so often, and with such compassionate interest, by that class especially which affords in most ample numbers victims to their silent tombs."

Part Third.

PERISCOPE.

MIDWIFERY.

STUDIES REGARDING TWINS. BY PROFESSOR SPAETH OF VIENNA.

OUT of 14,880 births, which have come under clinical treatment, I have 185 times (1 out of 80 cases) had the opportunity of observing twins; of these 135 occurred in multiparæ, only 50 in primiparæ.

In most of these cases, where the individuals came under observation during pregnancy, or at the very beginning of labour, while the pains were weak, and occurred at long intervals, their condition was diagnosed with certainty before the birth of the first child, either by the feeling of several foetal parts of similar size, or by the hearing of the (sometimes different) impulses of the heart at opposite points of the uterus, or by the want of correspondence of the place at which the cardiac beat was heard with the position assigned to the foetus by other symptoms.

Once, the diagnosis was established by this, that I clearly distinguished the sounds of the foetal heart in the abdomen of the mother, whilst by vaginal examination I discovered the loose bones of a macerated skull. Twice I could feel, in the stage of dilatation, two sacs which simultaneously projected through the os uteri, because the separation between the two bags of membranes which lay close together came to be directly over the orifice. In one of the cases the pregnancy had come to its normal term, and at the dilated os a tense sac could be felt, which completely filled the opening and allowed a head in the second position to be felt through it. To the left of this a second sac of the size of a goose's egg protruded purse-like, which, after artificial opening of the first sac, descended still deeper and then ruptured spontaneously. The foetus first felt came first into the world, and then the second was born in the first cranial position. In the second case, the pregnancy had come to the end of the sixth month, and two sacs likewise presented themselves at the opened os uteri, close to one another. In the left a head was felt, which was pushed backwards by a slight impulse from the finger, and allowed a foetus in a pelvic position to be felt in the right sac. A little later the head came lower down and pushed aside the other bag; but some time after the right sac descended and permitted the feet, which could scarcely be reached, to be recognised. I now ruptured this sac, from which a large quantity of water escaped, but again the left bag with the head rapidly advanced; this soon ruptured spontaneously, upon which the foetus in the cranial, and then that in the pelvic position was born. In both these cases the placentæ were intimately united, and there were two amnions, but only one chorion.

In a third case, where the afterbirths presented the same relations, it is probable that in the second stage of labour the two sacs presented in the same manner, but I only made an examination when the first of them was already ruptured. I shall afterwards have to return to this case; at present I shall merely remark, that here, too, the foetus whose sac burst first was born as the second child, so that this circumstance occurred twice in the three cases.

I will not here enter upon the consideration of the relative positions of the children, or of the irregularities which often occur in twin births, but content myself with the remark, that I have only three times observed, as a departure from the general rule, the expulsion of the afterbirth of the first child to take place before the birth of the second. It once happened in the case of a

woman who was on her way to the lying-in hospital, that the first of two seven months' fetuses fell to the ground whilst the mother was in the upright position, and drew its placenta after it, without the navel-string being ruptured. The second child was born in the institution. Both lived.

I have devoted particular attention to the following points:—the condition of the afterbirth; the relations of the children with regard to sex, development, and viability. I have endeavoured to determine in how far the two ova, or the two halves of an ovum, in a twin pregnancy retain their independence in the course of their development, or mutually influence each other; and to inquire whether in the observation of twins no data could be obtained for the solution of the problem regarding superfetation.

1st, *The condition of the afterbirths* was carefully examined in 126 cases; they presented all the known varieties.

49 times the placenta were separate, with two chorions and two amnions.

46 times the placenta were united, with two chorions and two amnions.

28 times the placenta were united, with one chorion and two amnions.

2 times the placenta were united, with one chorion and one amnion.

In one case where the placenta were united, and where there was only one chorion, the amnion was torn; and it is therefore impossible to say whether it was single or double.

In cases of united placenta, not merely when the chorion was double, but when it was single; nay more, in cases where there were evident anastomosis of the two sets of umbilical vessels on the fetal surface of the placenta, the limits between the two could be clearly distinguished by the presence of a line of demarcation with a scanty fibrinous deposit on the concave side, although Kiwisch denies the existence of this condition when the chorion is single.

In cases of a common chorion, I never saw the slightest indication by which I could conclude that the single chorion had been formed by the union of two formerly separate. The chorion was always perfectly smooth at the place where the two amnions bordered on one another, and did not show the least thickening, puckering, or depression towards the boundary wall of the amniotic sacs, even when these adhered to one another through the medium of a thin jelly-like texture, containing loose cellular tissue, such as is normally found between the chorion and the amnion, on which account some authors, as Nægele, have described a fourth membrane of the ovum as the middle layer.

Where the chorion was double, I never found on the united placenta, even where there was no line of demarcation between them, any anastomosis between the vascular districts of the two umbilical cords. It was found, indeed, in both the cases where, with one chorion, one amnion was present; it occurred in the case where the singleness of the amnion was doubtful; and out of the twenty-eight with one chorion and two amnions, it was met with seventeen times, that is, in more than half the cases. In every case the anastomosis took place by thick vascular branches, as has already been observed by Nægele; it lay quite superficially on the fetal side of the placenta, and its existence was always established by injections, if not of wax, at least of fluids containing colouring matter or mixed with air. I must also state that at the commencement of my investigations I made no special observations on this point, and no doubt many cases were overlooked; moreover, where the anastomosing vessels were small, and situated somewhat deeply, they may have escaped my attention; I therefore think that I may safely enunciate the statement, that, *in the majority of those cases where the placenta of twins are united, and where only one chorion is present (no matter whether the amnion be single or double), an anastomosis of vessels between the districts of the two umbilical cords may be clearly demonstrated, whether a distinct line of demarcation can be traced between the two placenta or not.*

The anastomosis exists sometimes between the veins, sometimes between both arteries and veins; and I find it once mentioned in my notes, that there existed an anastomosis between an artery of the one fetus and a vein of the other.

These observations constitute no new discovery, as Smellie and Levret had recognised the existence of such anastomoses a hundred years ago. I have thought it worth while to allude to them, because the more recent authors do not express themselves clearly as to the frequency with which the condition in question is met with, or as to the conditions under which it occurs. All however agree in this, that such union of vessels only occurs when the chorion is single.

The practical importance of the above facts consists in this, that the second twin, before its expulsion from the uterus, may bleed through the umbilical cord of the first, unless the placental end be tied on the birth of the first child. The following observation is a proof of this:—M. A., on her way to the Maternity Hospital, was suddenly overtaken with labour so that she gave birth on the street to a living boy; she was carried into the house of the nearest midwife. Here she remained for three hours without being examined. The midwife then made the discovery that there was a second child, and that it was in a cross position. She fetched a physician who fruitlessly attempted turning, and the woman was brought to the hospital, where she came into my hands. I turned and delivered the child without any difficulty, as the uterus was by no means firmly contracted. The boy, however, was perfectly anæmic, and dead. The afterbirth consisted of united placenta, with a single chorion. Whether the amnion had been single or double could not be determined, as it had been torn. On the foetal surface of the placenta venous anastomoses were clearly seen.

The insertions of the navel-strings were very various, not only when the placenta were separated, but when they were united. In both the cases where only one amnion was present, both the cords were inserted in the centre of the united placenta within half an inch of one another. Where the amnion was double, the cords were sometimes inserted in the immediate neighbourhood of each other, sometimes marginally and at diametrically opposite points. I never found a navel-string implanted on the partition wall formed by the membranes, and only once a vilamentous insertion of any kind, although certainly this kind of insertion sometimes occurs with greater frequency. Credé, for example, found it 5 times among 23 cases, and among these it was twice upon the partition wall and without anastomoses of the cords.

2d, With reference to the sex of the twins, I have to remark that the children were generally of the same sex, as out of 185 cases it was different in only 56. In one instance the sex remained undetermined, as the foetus was in a state of mummification.

With regard to the afterbirth, I can only make use of the 126 cases in which it was specially examined. Thus, out of the 49 cases with separate placenta, the sex was the same in 32, while in 16 the sexes were different, and in one, above referred to, the sex was undetermined. Of the 46 cases with united placenta, but double chorion, in 26 the sex was the same, and in 20 it was different. In the 31 cases where there was only one chorion the sex was always the same.

As my observations on this head agree with those of other authors, and as we have all found that in cases of united placenta with a single chorion (whether the amnion were single or double) the children were invariably of the same sex, I think it may be laid down as a general rule that in such cases the sex will always be the same, and that this is necessarily connected with the intimate relations of the afterbirth. In reference to this, I must express my entire dissent from the opinion of Arneth, in which he stands quite alone, that in such cases you may have children of different sexes; and I think that this statement is founded upon misapprehensions in the examination of the afterbirth.

3d, It is evident that in considering the *degree of the development* of twins, only those cases can be taken into consideration in which both children were alive at birth. I must here remark, that out of the 176 cases of this kind, in only 62 had the children come to the full time, that is, to the completion of the thirty-eighth week of pregnancy. In 6 cases the children could not be con-

sidered viable, as they had not reached the sixth month; whilst in 108 cases, though not quite mature, they were viable.

In general the children were of unequal size. Thus, out of 65 cases, in which the length of the body and the circumference of the head were measured, in only 3 cases were they the same, and in one of these cases the placenta were united and the chorion was single, as also the amnion, while in two the placenta were separate. Out of the remaining 62 cases, in only 29 was the first-born child the larger, 13 times out of 28 in mature, and 16 out of 34 immature twins. It is therefore only the effect of accident, that in the second clinique in this city, out of 60 twin births during the session 1858-59, Dr Hink, the assistant-physician, should have been able to assert that, "in twins at the full time, the second child is generally stronger than the first, whilst in premature twins the first child is generally larger than the second." Of the largest pair of mature twins, the first measured 19 inches in length, whilst the circumference of its head was $13\frac{1}{2}$; the measurements of the second being $19\frac{1}{2}$ and $13\frac{3}{4}$ inches. The smallest measurements of mature twins were the following:—The first was $16\frac{1}{2}$ inches long, and the circumference of its head was $11\frac{1}{2}$; whilst in the second the same measurements were 18 and $12\frac{3}{4}$.

Hence it follows, that if, as regards development, twins are generally inferior to single births, still that both may attain the normal size of the latter, and that at least the larger of the two commonly attains it.

4th, With regard to the *vital relations* of twins; in 185 cases, both children were alive at the time of birth in 176, whilst in 8 cases one, and in one case both had been dead for some time, and presented traces of maceration or mummification. The last case occurred in the ninth month of a woman pregnant for the third time, and presented nothing further remarkable, and no cause could be discovered. The remaining 8 cases, in which only one fœtus was dead, all presented something interesting; and I shall therefore give a brief abstract of them.

In the first 4 cases the cause of death could not be made out.

(1.) In the case of a primipara arrived at the tenth month of pregnancy, a sac the size of a child's head was said to have protruded from the genital organs, and to have ruptured spontaneously with the effect of allowing the escape of a discoloured fœtid fluid. I was sent for, and found the amnion in shreds protruding from the genitals, and at the fully-dilated os uteri was a distended sac, which I ruptured, whereupon a large quantity of ordinary amniotic fluid escaped, and after a short interval, a boy at the full time, $19\frac{1}{2}$ inches long, was born. Soon after his birth, and without the appearance of a second sac, another fœtus was brought forth, quite macerated, and only 17 inches long. The after-birth consisted of united placenta, one chorion and two amnions. Whether or not there were vascular anastomoses in the placenta was not examined into.

(2.) On the 28th of April 1854 I had examined a woman pregnant for the third time, and had given the diagnosis of twins; and on the 30th of June I had examined her for the last time, when I heard the two foetal hearts beat at opposite points of the uterus in the clearest possible manner. On the third of July, about the natural period, the confinement took place, and the second fœtus was already in a state of commencing maceration, the skin being readily separable, but not discoloured. The placenta were separate. This case was interesting as showing how speedily maceration of the child after its death takes place within the uterus.

(3.) In the case of a woman who had already borne a child, and in whom neither the duration of the pregnancy nor the position of the child *ante partum* could be made out, after the os was dilated the hand was introduced, the membranes were ruptured, and a fœtus found in a cross position was turned and extracted, and before the cord was divided its afterbirth came away. The new-born child (a male) was macerated, and was little smaller than the second (a girl), which presented in a cranial position, and was born alive. The placenta were originally separate.

(4.) A woman, pregnant for the third time, gave birth to twins, of which the first was alive, and presented the normal dimensions of a child at the full time.

The second was macerated and much smaller. The afterbirth consisted of united placenta, with one chorion and two amnions; and on the foetal surface of the placenta, an abundant anastomosis, both between the arteries and veins of the two circulating systems, was clearly recognised.

In the next 3 cases twisting of the navel-string was the cause of death.

(5.) A woman, who had already borne a child, thought herself seven months pregnant, and stated that for fourteen days she had suffered from cold, and had been tormented with thirst. At the same time she complained of a feeling of constant weight in the lower part of the belly, so severe that she was often obliged to stand still. The first-born child, a girl, was living, and $13\frac{3}{4}$ inches long. The second was an inch shorter, and its umbilical cord was thick and tough, and close to the navel, in a space four lines long,—it was so twisted as to be no thicker than packthread. The afterbirth was not particularly examined.

(6.) A woman, pregnant for the second time, was delivered in the ninth lunar month of a living girl, whose length was $16\frac{1}{2}$ inches, and the circumference of the head 12. An hour later she brought forth an entirely flattened mummified fetus, $8\frac{1}{2}$ inches long, which was completely entangled in its umbilical cord. The cord was very thin, quite flaccid, and presented innumerable twistings; the portion attached to the fetus measured 27 inches. The remainder of the afterbirth could unfortunately not be submitted to examination, as it had been thrown away by the midwife. She maintained, however, that there were two placenta, and that the entire length of the cord of the macerated fetus was two ells. The mother had been delivered before her admission into the institution.

(7.) In a woman who had already borne a child, and who was in the ninth month of pregnancy, the presence of twins was very readily diagnosed at the beginning of labour; because, as before mentioned, I felt a head with loose bones projecting, whilst over the lower part of the mother's belly the sounds of the foetal heart were distinctly heard. The first child was a macerated boy, with evident torsion of the umbilical cord, and was 15 inches long. The second boy lived. His length was 16 inches, the circumference of his head $12\frac{1}{2}$. The placenta were united, and showed no trace of separation, and on the foetal surface were manifest vascular anastomoses. The chorion was single, the amnion double.

In one case fibrinous deposits in the tissue of the placenta were the cause of death.

(8.) A primipara bore a living girl of the size of a seven-months' fetus. With the afterbirth arrived a second female fetus of the size of a five-months' child, which was quite macerated and compressed from side to side. The placenta were intimately united, and that of the macerated fetus was over its whole surface, as well on the foetal as on the uterine side, studded over with fibrinous deposits, and it was indurated owing to a similar deposit in its interior. Anastomoses could not be made out, perhaps on account of the degeneration of the placenta. The chorion was single, the amnion double.

It would appear from these cases that the death of one or more of the fetuses in cases of twin pregnancy is not of uncommon occurrence, as out of 185 cases it occurred nine times, that is to say, it occurred about once in every 21 cases.

With regard to the cases in which only one fetus died, it is remarkable that out of the seven in which the afterbirth was minutely examined, united placenta with double amnion, but only one chorion, were four times met with, and that in two of these vascular anastomoses were distinctly seen. In the eighth case, with fibrinous deposits, it is possible that anastomoses could not be found on account of the induration of one of the placenta, although they really were present; and in the fifth case, with torsion of the cord, the afterbirth was not particularly examined with reference to this point.

When the cause of death was demonstrable it was found only in the condition of the afterbirth, in the other four cases it could not be made out. Guillemot's opinion that the more rapid development of one fetus was the cause of the destruction of the other, has lately been coincided in by Scanzoni,

and has been emphatically adopted by Credé and Kussmaul; still I am not prepared to adopt it, because throughout there were no signs of pressure having been exerted by the living fœtus upon the dead one; because in all these cases the macerated fœtus was surrounded by a corresponding quantity of amniotic fluid, and was not so much inferior in size to its living neighbour as in the two cases where it was found flattened out. In these, the living fœtus in one case had a length of $16\frac{1}{2}$ inches, and the dead of $8\frac{1}{2}$; and the other time the living was of the size of a seven-months' fœtus, the dead of a five-months' fœtus. The compression had evidently taken place for the first time after the death of the fœtus, as this had been occasioned in one case by twisting of the umbilical cord, and in the other by fibrinous deposits in the placenta. Still I do not by any means say that the superior development of one ovum may not in a mechanical way occasion the death of the other. I entirely agree in the opinion of Cazeaux, which Scanzoni also concurs in, that in such cases, on account of the advanced decomposition, it often happens that nothing can be found either in the afterbirth or in the fetus to account for death.

5th, It is well enough known that the two ova of a twin pregnancy, or the two halves of a twin ovum, present a high degree of *independence in their development*; as, for example, everybody knows that not merely the fœtuses but also their afterbirths are ordinarily of different size. Cases are also known where one ovum has become completely degenerated, as into a vesicular mole, whilst the other has attained its normal development; or where one has been the subject of malformations, while the other has been quite normal. Amongst the above recorded cases several observations will be found which prove the truth of this law, not merely in the case of such fœtuses as, having separate placentæ, might be supposed more readily to maintain their independence as two separate ova, but in the case of those in which the most intimate union of the afterbirths may be assumed to indicate the existence of only two halves of one ovum. Thus I found in a case of united placenta with two chorions, one of them studded on its uterine surface with very numerous small calcareous concretions, whilst the other presented no trace of anything of the kind. In several twin-placentæ extensive fibrinous deposits have been found in the one, none in the other. Such deposits were particularly remarkable in three cases. In the first of these there were two chorions, and in one of the united placenta more than half the cotyledons were as it were encapsuled in a thick fibrinous mass. It belonged to the larger of two living twins, the length of which was $18\frac{1}{2}$ inches, and the circumference of the head $12\frac{3}{4}$; whilst the other, in which the placenta was normal, measured $17\frac{3}{4}$ and $12\frac{1}{2}$. In the second case which I have already mentioned amongst those where the fœtus was macerated, one fœtus had died at the fifth month in consequence of great fibrinous induration of the placenta, whilst the other placenta was quite free from fibrinous deposit, although the two had only one chorion. A similar condition, though in a less marked degree, and which did not cause the death of the fœtus, occurred in a third case, although arterial anastomoses were perceptible on the fetal surface of the placenta.

Fœtuses of very different degrees of development, although their circulatory systems were in connexion through venous anastomoses in their united placenta (one chorion, two amnions), were found in the case of a woman who had already borne six children; the child borne first was living and well conformed, the second, on account of hydrocephalus, was delivered after perforation. The latter presented numerous malformations, such as double hare-lip, wolf's throat, atrophy of both eyeballs, absence of the radius and thumb from the right upper extremity, club feet, absence of the stomach and spleen, and numerous vascular anomalies, such as origin of the aorta from the right ventricle, only a single umbilical artery, etc.

But the cases which speak most strongly in favour of the independent development of each half of the ovum are those in which one fœtus has died, whilst the development of the other has gone on normally, although with only a single chorion, and well marked vascular anastomosis have been visible on the fetal surface of the united placenta, and the vessels of the dead fœtus have

not, as in the seventh of the above cases, become impervious from twisting of the cord, but have, as in the fourth case, remained pervious. I think, therefore, that in the case of twins, no matter what may be the condition of the placenta, the statement of Credé is correct—"Each foetus leads a separate existence, independent of the neighbouring foetus."

The doctrine of the exertion of a prejudicial influence by the one ovum upon the other, or by one half of the ovum upon the other, obtains no support from these observations; for the compression of the foetuses, which existed in two of the cases mentioned above, certainly only came into operation after death.

6th, Finally, I would inquire whether, amongst the cases I have observed, no data can be found for the solution of the question which Kussmaul has recently mooted in his excellent works. I mean the question of *after-conception*, superfecundation, and superfetation, in the sense of Kussmaul, and as it was earlier apprehended by Carus, Gruner, and Wildberg, although they could not so sharply define the above-named conditions. It obtrudes itself almost involuntarily in reference to twin-pregnancies in the following quotation from Kilian's Midwifery, "Whether a single copulation is sufficient for such a fecundation, or whether repeated cohabitation is necessary?" In other words, whether, at least in many cases, this condition depends upon repeated cohabitation. I think the different degrees of development ordinarily observed in the offspring affords a certain support to this opinion.

Before I make use of the materials at my disposal in endeavouring to solve this question, I must revert to the mode of production of twin-pregnancies generally.

All the more recent authors, as Cazeaux, Chailly, Scanzoni, etc., explain twin-pregnancies in this way, that either two ripe ova are fecundated, which may either have escaped from separate Graafian vesicles, or have been contained in one, or that the fecundated ovum had two germs; the latter condition, Kiwisch, indeed, denies, but it has recently been sufficiently established, even in the case of the human ovum. In conformity with the original relation of the ovum, all authors explain the relations of the peripheral parts of the ovum in twins. Thus, it is generally thought that in cases where two ova were fecundated, two amnions, two chorions, and two placenta, either entirely separate, or more or less united, are developed; whilst, on the other hand, where two germs have existed in one and the same ovum, the development of the above parts takes place differently, so that in such cases the placenta are always united, with not unfrequently vascular anastomoses of the two umbilical cords, and invariably with a single chorion, because the germs were contained within the same zona pellucida. The amnion must always be double originally, although at a later period it may become single by atrophy at the points of contact, as indeed not unfrequently happens.

Kiwisch dissents from this explanation, whilst he at once assumes that the placenta always remain separate when the ova originally came from different ovaries, but that they coalesce when the ova have had their origin in the same ovary. Hohl objects to this statement, and I must corroborate him in doing so, as on two occasions, on examining the bodies of women who had given birth to twins, I found two corpora lutea in the right ovary, whilst the placenta were completely separate. Kiwisch further denies that two germs are often present in the human ovum, and he therefore maintains that the chorion is always originally double. He and his followers explain its not unfrequently becoming single at a later period by atrophy, and adduce as proof of this, that a double yolk-formation has never been seen in a human ovum, and that there is sometimes remarked on the outer surface of the single chorion, at the place where the two ova were brought into contact, an annular interlacement. In opposition to this doctrine I must state that, as above mentioned, the presence of two germs in the human ovum is now sufficiently established, and that in such a case, as development proceeds, only one chorion could originally be formed. Farther, in spite of the most careful examination, I have never been able to find, in any of the not few cases which have come under my observation, an indica-

tion of a former division of the chorion, either on its outside or on its smooth inner surface, where such a condition would be still more easily seen. Finally, while in double chorion I have never, in single chorion I have so often seen vascular anastomoses between the ramifications of the two umbilical cords on the foetal surface of the united placenta, that I really believe that this condition generally exists in single, but never in double chorion. Also, in cases of a common chorion, I have always found the children of the same sex; whilst in double chorion and united placenta, I have found them not less often of different sexes than in cases of separate placenta. I think, therefore, that the two last-mentioned facts, by the constancy with which they occur, point to an originally intimate connexion of the twin ova, and that we may decidedly deny that the common chorion is produced by the atrophic fusion of two. Whether in the cases where there is only one amnion for both twins, the membrane was originally single, or was derived from two by atrophy at the points of contact in the earliest period of development, I shall leave for the present undecided, as the answer to the question is of no importance with reference to the solution of the problem I have already proposed.

I think that from these considerations it may with certainty be concluded, that twin-pregnancies, with double chorion and amnion, are always the result of the fecundation of two ova, and that the ova may have come from the same or from different ovaries, as well as from one and the same or from separate Graafian vesicles. In these cases the placenta may be either separate or united, according as the ova were implanted in the uterus, near to or at a distance from one another; the latter condition being possibly dependent upon change of place, which it is demonstrated may occur when the ova came from the same Graafian vesicle, and conversely. But with a common chorion, when the placenta are always united, the twin-pregnancy has certainly proceeded from one ovum with two germs, whether the amnion be single or double.

In the latter class of cases a single fruitful coitus is certainly sufficient for the establishment of a twin-pregnancy. But, in the former cases, though a single coitus may suffice, it is also possible that two may be necessary for the fecundation of the two ova; and as we must with most authors (Kilian, Credé, Scanzoni, Kussmaul, etc.) grant the possibility of fecundation of a second ovum at least for a short time after the fecundation of the first, so we must also allow that among these cases of twin-pregnancies which depend upon two ova, and in which two chorions are present, whether the placenta be separate or united, there may also be cases of superfecundation. Still it is not maintained that these must actually be cases of superfecundation. It would therefore be of interest to find whether, in the observed cases of twin-pregnancies, there are no data which bear directly upon this question in one way or the other—whether or not the generally-remarked inequality of twins is dependent upon superfecundation.

In a special case we have only a right to revert to superfecundation, either when children of an equal degree of development, which have lived together as twins in the uterus, are born with a considerable interval (such as several months), or when twins of very unequal degrees of development are born about the same time.

With reference to the first of these points, I may mention that, out of the 185 cases there was no one of any importance, as the interval between the birth of the first child and that of the second never amounted to more than eighteen hours.

With regard to the second point, I may state that the cases where either one or both of the children have died during pregnancy (unless, indeed, the dead child should be considerably larger than the living) teach absolutely nothing, and therefore, as Scanzoni and Kussmaul judiciously remark, are of no consequence either way.

There remain, therefore, only the 176 cases to be considered, in which both children were alive at birth; but of these only 46 are available, because in them only the size of the children was recorded, and at the same time the condition of the afterbirth was observed.

Among these were 15 cases in which only one chorion was present, and in which, therefore, the twins had certainly been the result of a single fruitful coitus. In only one of these cases was the size of the children the same, in all the others it varied more or less. Thus, out of the 6 mature sets of twins belonging to this class, the greatest difference which was met with was 1 inch and 2 lines in the length of the body, 10 lines in the horizontal circumference of the head, and 14 ounces in the weight of the body, whilst the children were intimately connected to one another by arterial anastomoses. Amongst the 9 pairs of immature twins with a single chorion, the greatest difference in size (in a case, moreover, where there were also anastomoses on the united placenta) was 3 inches in the length of the body, and 1 inch and 8 lines in the circumference of the head.

Among the 31 twins with double chorion, the greatest difference which existed in the mature children was in a case of separate placenta, where there was a difference of 1 inch and 9 lines in the length of the body, and 1 inch and 6 lines in the circumference of the head. Among the 19 sets of immature twins belonging to this class, the greatest difference occurred in a case of united placenta, when there was a difference of 1 inch and 6 lines in length, and 11 lines in the circumference of the head.

These results sufficiently establish the following positions:—1. That twins, in cases where they are developed from two ova, do not present more considerable differences in size than in cases where they have been developed from one and the same ovum. There is here, therefore, no good reason to regard superfecundation as the cause of the difference of size in twins, although at the same time the possibility of such a cause is not excluded. 2. That in twins developed from the same ovum, and in spite of their intimate relation to one another, the difference in size may be as considerable as in single children which may present a difference equivalent to two or three months' growth.

Were we even to assume with Matthews Duncan the possibility of a second conception in the eighth or ninth week of pregnancy (an interval of time which I consider too long), we should not, according to the above data, be in a position to prove it by the fact of a difference in the size of the twins. Still less could we from the same facts deduce a proof of superfecundation; and I think that, in the difference in the size of twins,—at least, in the later period of pregnancy generally,—no proof for or against second conceptions can be looked for, as, according to the facts I have recorded, the size of twins developed from the same ovum may differ so considerably. Perhaps the examination of twin-ova during the first months of pregnancy might teach something with regard to this question.—*Zeitschrift der k.k. Gesellschaft der Aerzte zu Wien.*

ON THE DIAGNOSIS OF THE SEX OF THE FŒTUS. BY DR STEINBACH, JENA.

THE question I am about to consider is comparatively so new, the observations regarding it are so isolated, and are so much in opposition to the statements of Dr Frankenhäuser, that it cannot by any means be regarded as settled. Only a long series of observations, carefully instituted and free from prejudice, can determine whether or not there is any truth in Dr Frankenhäuser's discovery that a low average of the cardiac pulsations in a fetus indicates a boy, while a high mean is symptomatic of a girl. In the following pages I offer a small contribution to this inquiry. It is evident that observations of this kind can only be undertaken where material is abundant, and where there is plenty of time at the disposal of the observer; while acting as assistant physician to the Lying-in Hospital of Jena I had the favourable opportunity in question. It was not without some misgivings that I begun and carried on my observations upon 56 pregnant women, in the course of the summer 1859, but at the end of that series I was able to discontinue my observations, as they almost exactly confirmed the doctrines of Dr Frankenhäuser, for out of the 56 cases in question I was wrong in predicting the sex only 13 times, and my errors were in cases into which, on account of their peculiarity, it will be necessary to inquire further on, in order to estimate their value in determining the sex of

the child. (Here follows a Table which contains the results of the examination of the fetal heart with regard to frequency, made morning and afternoon, from the time of the woman's entering the hospital until the commencement of labour.)

I must now premise a few observations, partly with regard to the examination in general, partly regarding the precautions to be observed, and which ought to be attended to if any result of value is to be obtained.

I did not content myself with examining the pregnant woman two or three times. It is soon found where cases are for some time under observation that considerable variations in the frequency of the fetal heart occur, and hence a somewhat extended series of examinations is necessary to determine the mean number of its beats. Accordingly I auscultated each pregnant woman every day, morning and afternoon, commencing on the day after her admission into the institution, and continuing my observations until labour set in. It often happens that the observations only commenced in the last days of pregnancy; but, on the other hand, there are a good many cases which were observed during a month and even more before labour occurred, and these confirm the observations of others that with the advance of pregnancy a diminution in the frequency of the pulse of the fœtus, corresponding with its increasing development, does not take place. I would willingly have instituted observations on the fetal pulse at a much earlier period of pregnancy; but this, by the rules of the institution, was impossible, as with few exceptions no patients are admitted gratuitously before the last month of pregnancy.

I counted the beats of the heart during a quarter of a minute, and if I found considerable variations from the number I had formerly noted, I counted again several times, and finally took the mean of the observations with regard to variations of the pulse, which, according to some observers, often show considerable differences; it is not to be denied that they do occasionally occur, yet in continuous observations they either equalize themselves, or they are entirely lost in the general sum of the observations. I may mention the two cases in which the differences were the greatest, but in which the exceptional numbers were quite isolated. In the first (a boy), where the variations of the frequency of the heart were on the whole inconsiderable, I found the fetal pulse one morning fallen so low as 108 without any assignable cause; in the second (a girl), it maintained for some time a frequency of 192.

In reference to the two extreme numbers fixed on by Dr Frankenhäuser, by means of the variations below or above which we are to determine the sex of the child, I am not entirely at one with him. Though from my observations I have found 131 to be the mean number for boys, and 144 for girls, my extreme number oscillated between 133 and 143, certainly not an unimportant interval in opposition to the assumption of Frankenhäuser, according to whom 136 is the extreme number. I do not, however, consider it necessary to rely on a particular number, because, as I have already stated, slight variations which may range from 1 to 10 may be present, and because slight errors in counting during a quarter of a minute cannot be entirely avoided. But is it not enough if it is only proved that the higher numbers correspond to girls, the lower to boys? In reply to this I must state that mean numbers under 136, which belong to the male sex, are far from not showing such variations as up to 140, and even higher, and I confess that I should have much more confidence in diagnosing a boy if I repeatedly found the frequency of the pulse between 124 and 132.

On account of the difficulty of observations of this kind, I think it not advisable to recur to the mode in which the examination is to be performed, and to mention the sources of disturbance and the precautions to be avoided, in order that the fetal heart may be accurately counted.

The reason of incorrect or not altogether exact observations depends sometimes on the observer, sometimes on the person under examination, sometimes on the fœtus, and not unfrequently upon all three.

An inconvenient position on the part of the observer, which may lead to sleeping of the foot and consequent shaking, or to congestion of the head with

accompanying hallucinations of hearing, is always a source of disturbance. The most suitable position is that in which the observer is not at all in his own way; therefore the woman should lie on her back with the head moderately raised, in as comfortable a position as possible, towards the edge of the bed on which the observer is half seated, and from which he bends forward.

Of still greater importance are the sources of disturbance on the part of the pregnant woman; among these I might reckon,—*1st*, her uneasy position, on account either of her nervous dread of the unusual examination, or of dyspnoea, aggravated by the recumbent posture, or the susceptibility of the parts about the uterus, in consequence of which, on the application of the ear or the stethoscope, the walls of the abdomen are put in motion by the contraction of the muscles by which a disturbing noise is produced. *2d*, Sounds generated in the intestinal canal; the communicated breathing of the mother; the sound of the beating of her abdominal aorta. *3d*, The contemporaneous occurrence of uterine bruit, which may drown all other sounds.

Still more complicated are the difficulties which may be occasioned on the part of the fœtus. The principal of these are, *1st*, Its reflex movements, which very often, if not always, are called forth by the straight position of the mother, as also by the application of the stethoscope or the ear to her belly, and we must often wait for a minute (during which time I remove neither the stethoscope nor the ear from the belly) until the violent movements of the fœtus, and with them the accelerated and unrhythmical action of the heart have subsided. *2d*, The occurrence of considerable differences in the frequency of the pulse, which may occur without any assignable external cause, and which may depend upon some unknown conditions of the fœtus, or perhaps upon some peculiar state of the maternal organism. *3d*, The sudden occurrence of a murmur in the umbilical cord, which not only may make it difficult to count the pulsations of the fetal heart, but what is of more consequence, may produce a difference in the frequency of the pulse, a circumstance which was also noticed by Frankenhäuser. It is best to wait until the murmur has disappeared, for where it remains audible and uninterrupted from day to day, it becomes necessary to abandon the observation of the case. *4th*, The difference or rather the change of the double beat, consisting in this, that at one time the first sound of the heart, at another the second becomes more marked, which resembles unrhythmical action of the heart, and often makes it necessary to begin to count afresh. I shall now return to the 13 cases, an analysis of which I promised at the beginning of these remarks.

The first case should be excluded from this series of observations. From the mean frequency of the pulse (141), I inferred the presence of a girl; but these turned out to be twins, which, on account of the great distention of the uterus, it would have been impossible to diagnose. It is right to add that the twins were both boys.

The 2d and 3d cases should likewise be excluded, as indeed not the mean number, but the series of single numbers would perfectly have corresponded to a child of either sex. But in these, especially in the 3d case, the mean number cannot be employed, because variations occurred which could not in any way be accounted for.

Cases 4 and 5, and 6, 7, 8, 9, constitute two groups of much interest. I must here remark, that in the course of my inquiries I made simultaneous observations upon the pulse of the mother. I thereby endeavoured to answer the question, whether and how far the frequency and quality of the maternal pulse as an index to the healthy or unhealthy condition of the mother, can have an influence on the life of the fœtus, and in what way it would manifest itself upon the latter. The two first-mentioned cases (4 and 5) appear to answer this question. In case 4 the mean frequency of the fetal heart was 145; the mother was pregnant for the fourth time, and was suffering from tabes dorsalis; her pulse was on an average 92. In case 5, the mean frequency of the fetal heart was also 145; the mother, a primipara, was suffering from chronic metritis, which was subject to occasional exacerbations; the average of her pulse was 97.

In each of these cases the constant high number of the foetal pulsations justified me in assuming the presence of a girl; it turned out, however, that both were healthy boys. Whereas, on the one hand, it would be premature to draw from these two cases the general conclusion, that disease of the mother, with quickened circulation, increases the rapidity of the foetal pulse; yet, on the other, it would be worth the trouble, and it is strongly to be recommended, that other observations should be instituted upon this point, particularly as Hohl relates that, in the case of a pregnant woman suffering from small-pox, the frequency of the foetal heart was 260, and six hours after its birth the infant was covered with a variolous eruption.

The group 6, 7, 8, 9, is perhaps still more interesting. The mean frequency of the heart's beats in these cases was 131, 147, 135, 136. In the two first cases a murmur in the umbilical cord was constantly present; in case 6 the child was born with the cord twisted twice, and in case 7 with it twisted once round its neck. In cases 8 and 9 an umbilical murmur was almost constantly present; at birth there was no twisting of the umbilical cord, but in both cases it was very thin. However, in all four cases, pressure upon the cord was the cause of the murmur. But that an umbilical murmur, depending upon pressure of the cord, goes along in all cases with a diminution in the frequency of the foetal heart, as seems to be borne out by cases 6, 8, 9 (where boys were expected, but where girls were born), is contradicted by case 7, where the conditions were reversed, I having been led from the frequency of the foetal heart to expect a girl, but where a boy appeared. But still less should it be denied that pressure on this cord (as indeed I have had other opportunities of observing, especially during the course of labour) may exert an influence on the foetal heart, and may be an obstacle to determining the sex of the child by the way we are now considering.

There remain now only cases 10, 11, 12, 13; cases certainly in which there appears to be no explanation of the erroneous diagnosis arrived at, except that the observations extended over comparatively too short a time.

Accordingly, the thirteen cases which I have now described may with propriety be looked upon as exceptions to the rule, and accordingly the errors in the determination of the sex of the foetus are reduced to the last four cases, and the results of my observations speak even more strongly in favour of the law I have endeavoured to illustrate than the language I have employed at the commencement of this paper.

Finally, I may mention two cases, which have indeed nothing to do with the diagnosis of the sex of the foetus, but which, in another point of view, are of considerable interest.

In the *first*, during the last nine days of pregnancy, in spite of all the pains which were taken, the sounds of the foetal heart could not be heard, although during the previous three weeks they had always, with the exception of a single afternoon, been clearly recognised; accordingly, though all other signs were wanting, I diagnosed the death of the foetus. At birth the epidermis of the foetus was already separating, and was hanging in loose shreds from many parts of the body. I mention this case as noteworthy, because it shows, that if the sounds of the heart, which had previously been heard without interruption, cease to be audible, we have a right to consider that the foetus has died. It is no doubt true that the sounds of the heart may disappear from time to time, though not nearly so often as is generally believed; this only happened 9 times out of my 56 cases.

The *second* is the only case in which I had an opportunity of noting the sounds of the foetal heart at an earlier period of pregnancy than in the others, the woman having been delivered during the 34th week. Here I predicted from the mean frequency of the pulse (141) that the foetus was a girl, and the result corresponded to my expectation; in other words, the state of the foetal pulse even sometime before its birth affords us a means of determining its sex.

I may briefly recapitulate the various circumstances which, according to my observations, may interfere with the certainty with which the sex of the foetus

may be inferred. 1. Too short a period of observation, which does not give an opportunity for detecting variations which may be considerable. 2. The last days of pregnancy. 3. Insufficient care on the part of the observer. 4. Several pregnancies. 5. Those cases where the frequency of the pulse might correspond to either sex. 6. Diseases of the mother. 7. Pressure on the umbilical cord. 8. Cases in which the differences of the pulse do not as yet admit of any explanation. It thus appears that there is still a wide field for the existence of errors in diagnosing the sex of the child.—*Monatsschrift für Geburtskunde und Frauenkrankheiten*, December 1861.

SURGERY.

LECTURES ON THE TRANSMISSION OF SYPHILIS BY VACCINATION. DELIVERED AT THE HOTEL DIEU BY M. PIL. RICORD.¹

LECTURE FIRST.

WE have to lecture to you to-day, as you are already aware, upon the case of a female in the wards of our learned colleague, M. Trousseau. Her case is a curious one, and all the more so that it has reference to a question of pressing interest at the present day. This young female, aged eighteen, was admitted to the Hotel Dieu on the 6th of September last, on account of a uterine affection from which she suffered. She was frequently and carefully examined, and nothing further was discovered but a catarrhal affection of the cervix uteri, which was granular; at that period she was assuredly free from any syphilitic affection. During her stay in hospital, an epidemic of variola broke out, and, as a precautionary measure, she was vaccinated, although this had been done previously. The vaccine lymph was obtained for this purpose from an infant who had been vaccinated with virus furnished by the Academy of Medicine. Four other children were inoculated at the same time, with all of whom the vaccination followed its regular course, and nothing occurred to excite suspicion as to the nature or quality of the vaccine matter employed. Furthermore, during the twenty days the children remained in hospital after being vaccinated, nothing abnormal occurred in any of them. In this young female, however, although vaccinated on both arms, no pustule appeared; but this excited no surprise, as she might be presumed to be still under the influence of her first vaccination. A month after leaving the hospital she again returned to the Hotel Dieu, complaining of her left arm, on which two large cethymatous pustules were found to exist. This created no uneasiness, as it was presumed to be a tardy eruption of vaccinia, which had been irritated by picking and scratching. Soon after it was observed that the axillary lymphatics were engorged, and an eruption of syphilitic roseola appeared upon the surface. In short, here we have a patient free from syphilis, vaccinated, and a month afterwards syphilis develops itself; and, having examined this patient carefully, I have no hesitation in saying that the eruption presents a typical appearance. There can be no possible mistake. On the arm we find two tubercles, with a large, hard, rounded and elevated base, the margins thickened, and the surrounding parts completely unconnected with the affection developed in them; in the axilla we find a multiple glandular enlargement; upon the skin we find a roseolar eruption. To our eye the sore presents the characters of a variety of the indurated chancre; it is a specimen of the "*ulcus elevatum*;" it is the chancre which has undergone the transformation (*in situ*) into a condyloma. Considering the probable origin of this syphilitic infection, it becomes a question whether it should be attributed to the vaccination. In order that I may not be accused of always being opposed to such facts, I wish to examine this example before you; for scientific good faith is the only safe foundation of progress; so that, while even after a fact has presented the same aspect to you a hundred times, if the hundred and first time it seems to contradict your previous experience, you must pause and reconsider it again—not because you are mistaken, but because the facts have deceived you. It is, indeed, when you come to consider such contradictory and exceptional facts, that you should redouble your precautions; if you would settle your convictions upon a solid basis, it is necessary that you should challenge everything connected with the examination—even your own senses, for even they may deceive you.

We have for some time past entered upon a period of controversy, and I have always anxiously desired that it should come, for progress commences with such

¹ Reported by Dr Deneffe. Translated by Patrick Heron Watson, M.D.

discussions, and the question which arises in the present instance is merely a phase of the great contest waged between those who admit and those who reject the doctrine of the communicability by contagion of secondary syphilis. Is constitutional syphilis, when in a state of activity, capable of communication by contact? That is the question which is raised by the present case.

For a very long time I contested the possibility of the transmission of secondaries. To-day, however, I admit it; but not in the absolute manner in which some of the partisans of this doctrine would accept it, who seem ready to dispense with the primary sore altogether as a cause of syphilis. Truly, there is plenty of syphilis in this world, and I know something of it, but if secondary symptoms were communicable in anything like the degree which some have attempted to make us believe, it would be vastly more common still, and we should have renewed under our very eyes the epidemic of the fifteenth century. At the very time when I find the doctrine that I have always professed so violently attacked, I am compelled to occupy your time, both with it, and with myself; but in introducing myself to your attention I have done so at M. Trousseau's request. You know in what condition the study of syphilis was when I became surgeon to the Southern Hospital. The notions of the fifteenth century were still regarded as classical. It was the popular idea (and a very convenient idea it was) that the syphilitic virus could produce indiscriminately chancres, gonorrhœa, condylomata, and warts; that the period of incubation in syphilis might last during an indefinite period of hours or years. It appeared quite natural that a man affected with gonorrhœa at fifteen should at the age of twenty-four present venereal affections resulting as a direct consequence of that discharge. Syphilis, it was then believed, could occur in the same individual several times; while one might become infected by the most extraordinary means of propagation. You might have it given you in a bouquet of flowers, in a letter, by one whispering in your ear. If you walked along the street of Notre Dame de Lorette without an umbrella, and a carpet were shaken over your head, it was enough to give you syphilis. In short, the infection might be said almost to fall from the clouds; and, besides, there was one single remedy for all affections reputed as syphilitic, and that was mercury. Read the works on syphilis of that period, and tell me if in 1830 the study of the disease was in a more advanced condition.

The study of clinical facts soon showed me that syphilis could always be traced back to its origin in an ulcer called a chancre. I did not invent this law; it was known before my day, and I have never professed to have invented such a novelty, but I have recalled it to general notice. I have discovered the true value of a principle which had previously escaped observation—a principle of which people were either ignorant or careless. But, although I had arrived at the conclusion that there was no syphilis without the chancre, was the reverse equally true, and was I justified in saying that every chancre was followed by syphilis? Certainly not; for I soon perceived that there were two distinct groups of ulcers, the one always, the other never, accompanied by constitutional infection. I was not long in doubt as to the distinctive character of these two groups, so as to diagnose the *infecting* from the *non-infecting* chancre. The infecting chancre was an indurated chancre. Hunter had already described the chancre as constantly presenting an indurated base, but he believed, furthermore, that all chancres infected the economy. The symptom of induration is not the only feature characteristic of this form of chancre; it is distinguished besides by the following signs: it is usually solitary, indolent, discharges little pus from its surface; its progress is soon limited, its surface speedily loses its pulpy and grey character; its outline is regularly rounded, it looks as if it had been cut out by means of a gouge; it is rarely deep. Frequently the skin is not even destroyed by ulceration, and the sore might pass for a superficial excoriation. It has a great tendency to granulate, to become elevated; to pass from the open to the close condition, from the state of ulceration to that of the *ulcus elevatum*. When pressed between the fingers, one experiences a sensation of elastic firm resistance, closely resembling that of cartilage; it uniformly affects the neighbouring lymphatics, giving rise to an enlargement of the whole chain, which is unattended by inflammatory symptoms, and never suppurates as such. Should such an unusual event occur, the pus is not capable of inoculation. The symptom of induration is therefore the special characteristic of the infecting chancre. In the majority of cases this symptom is easily recognised; but sometimes, whether this depends upon our seeing the case too late to observe it, or because the nature of the texture affected does not admit of the formation of characteristic induration, it becomes a matter of difficulty to determine its existence. But if the induration cannot

be recognised in the chancre itself, it should be sought for in the lymphatics, which with the chancre form a triangle, of which the sore is the summit, and the enlargement of the glands the base. This induration, whether we meet with it occurring in the lymphatic glands or in the base of the chancre, should be regarded as a plastic capillary lymphangitis, all the more because we find it best marked in those parts where lymphatic vessels are most largely developed.

The non-infecting chancre possesses characters in every respect distinct from those just enumerated. It is soft in its base, usually multiple, painful, suppurating copiously, excavating the textures deeply, with undermined or everted margins, and a ragged edge. The surface long continues to have a pultaceous, grey appearance; it has no tendency to granulate, but rather on the contrary to become phagedenic. It has no multiple glandular affection accompanying it; one gland alone is affected by inflammation, which suppurates, and the pus is contagious.

For a long time, however, I regarded these two kinds of chancre, so different in their characters, their progress, and their consequences, as arising from a common source, and presumed that the differences they presented in different individuals were due not so much to the virus as the soil in which it took root. Resting upon these first principles I commenced my researches on the transmission of primary and secondary affections.

At the outset of my investigations, I asked myself if I was justified in experimenting on individuals free from syphilis, and if for the sake of advancing scientific inquiry I had any right to compromise the health of those who confided themselves to my charge. I felt myself at once stopped by a consideration of the responsibility I assumed to myself if I should possibly communicate syphilis, with all its disastrous results, to a perfectly healthy individual, and this was really the reason why I confined my experiments to inoculating those who had already suffered from syphilis. I soon saw that the soft chancre was always capable of inoculation, but that the indurated chancre was usually non-inoculable, and that secondary affections were never inoculable, and I arrived at the conclusion that the soft chancre is alone inoculable. Making further progress, and remarking that whether inoculation occurred naturally or was effected artificially, an indurated chancre never developed itself in a patient who had already suffered from syphilis, I established as a law that we could not have "pox upon pox," in other words, that syphilis could never occur twice in the same individual. Inasmuch as a diathetic condition is established in syphilis; while it endures, another diathesis of the same kind cannot be superinduced: it follows conversely that the recurrence or reappearance of an indurated chancre in an individual previously affected with syphilis (if such an event should ever be met with) may be taken as a proof that he had been *cured* of the first attack of that malady.

Such were the conclusions at which I arrived. In opposition to the law that secondary symptoms are non-contagious, some quite exceptional facts have been adduced: but the question may very fairly be put, Are those to be received as *bona fide* truths? Are we to admit that in all those cases where we have been unable to trace the origin of the syphilitic infection to its true source, the disease was due to the communication of secondary affections? It is here we enter upon debatable ground.

We have established as a first principle that the chancre is the source of the chancre, and experience has universally demonstrated its truth; but until a comparatively recent period, it was doubtful what relation the two forms of chancre bore to each other, whether they were transmitted separately each after its kind, or indifferently through each other. Some believed, some still believe, that there is a double virus, and I acknowledge that I am inclined to coincide in their view. But when speaking of this subject I must do justice to the School of the Southern Hospital, which has produced so many adepts devoted to science, as well as some unthankful for the benefits they have received; it is to this school that the definite distinction between the species of chancres is due, and it was from facts occurring under my own observation that I was led to this distinction before any publication had appeared on the subject. A medical student, anxious to effect syphilization as a prophylactic measure, covered himself with chancrous ulcers. One day I recognised an indurated chancre in a patient who came to be admitted into my wards; the student wished to inoculate himself from this sore; I attempted to dissuade him from so doing, and assured him of the certainty of his infecting his economy with syphilis, but all in vain, he inoculated himself. The previous soft chancres had not infected him, but this time it was no longer as before, the indurated chancre made its appearance, and the student became affected with syphilis. From that period I understood what was wanted to enable us to distinguish the difference in chancres apart from the individual in whom they occurred.

But in private practice, where the source of contagion is so often overlooked, it often becomes a matter of the greatest difficulty to trace back the symptoms to this real source, so as to enable us to explain the wonderful facts which manifest themselves before our eyes, but which remain a mystery in spite of all our researches. Do we not, for example, frequently see a female communicate different diseases to different individuals who have had connexion with her—one may have a gonorrhœa, another a soft chancre, a third an indurated sore, and it does not seem unreasonable to explain this by attributing the differences to the special aptitudes of each to be affected by this single source of disease. Do we not frequently see individuals affected by females who appear, when examined, to be perfectly sound, and others who remain altogether free from disease, in spite of having connexion with women who were infected, and still the question arises how to explain all these apparent anomalies. Some time ago I saw along with another medical man an elderly gentleman who occupied a distinguished position in society. He had a sore upon his penis, which we recognised as a well marked example of a chancre. This individual kept a mistress, in whose honesty he placed implicit confidence. We examined her, but found her perfectly well. Some days afterwards I had occasion to visit two persons who also had had connexion with the same female, and neither of them suffered from chancre. Perhaps this anomalous fact might be capable of explanation in the following manner:—one of the lovers of this female had left with her some of the chancrous virus which the next comer had the misfortune to remove.

There are accidents which appear inexplicable at first sight, but which are no longer so when one remembers that improprieties may be committed. A chaste girl was kissed one day by some one unknown, and an indurated chancre of the lip was the consequence! A young lady was attacked with syphilis from nothing else than having received a nosegay! If the mother of this young lady had only been by when she received the flowers, I am sure they would not have given her the pox! It was in circumstances where no such easy explanation of the source of the mischief could be given that I was myself a witness, when in 1843 an epidemic of syphilis occurred in Paris, under my own eyes. Nine little Jewish children had been circumcised upon the eighth day from their birth, in accordance with the religious ritual of their community, in none of them did the wound cicatrize; in some of them I saw it degenerate into soft chancres, in others into indurated sores; secondary symptoms of every kind made their appearance in these last unfortunates. One of them, whose surface was intact, infected its mother; while others, whose faces were covered with secondary eruptions, did not infect any of those who took charge of them. The same individual had operated upon all these children nearly about the same time. I sent for this individual, his name was Galantus; I cannot tell you how carefully I examined him. I did not leave the smallest part of his body, not one of the natural apertures, without carefully investigating it, and I found nothing, absolutely nothing in him to account for it. I also examined his wife; she was intact. In addition to his functions in connexion with the synagogue, Galantus was a veterinary practitioner. I examined the horses under his care; none of them were affected with either glanders or farcy. I made him bring all the instruments he employed in performing the operation of circumcision; with his knives and his scissors I made numerous experimental inoculations; I scraped the strap on which he set his instruments, and I applied the powder so obtained to the inoculations I had made; to other solutions of continuity of the surface, I applied the ribands which he employed in his operations—none of them took effect. I could not produce the development of a single chancre. This strange epidemic is still to me as great a mystery as ever. What was the source of the infection, how and why the contagion was so communicated, I could not discover. One thing, however, was certain, that the infection of these children could not be attributed to vaccination.

LECTURE SECOND.

In my former lecture I have shown you the foundation on which my doctrines are based, and I have told you to what practical results my researches have led me. Whenever I have attempted to inoculate secondary symptoms, however multiplied these experiments have been, I have always failed in my endeavour. But to this it has been objected that I have not experimented upon healthy individuals, but only on patients already suffering from syphilis. I have already acknowledged the restrictions I have felt to be imposed upon me in this matter: all the world, however, has not imitated my prudence, and under my observation I have seen pupils, free

rom any syphilitic infection, practise in their own persons the inoculation of secondaries. But the result of these experiments has uniformly been negative. Some have accused me of a want of persistent attention in watching the progress of those cases in which such experiments were made; but I must protest distinctly against this allegation. I have not lost sight of the individuals who were inoculated; for during the course of several months I have seen them daily at my hospital visit, and I declare that none of them has suffered from any affection in consequence of the inoculation. Not only my pupils, but M. Cullerier himself has inoculated in his own person the matter from a pustule of syphilitic ecchyma, and the result has been equally sterile with my colleague as with the students of whom I have just spoken. Surely no one will accuse him of a want of observation of himself! Strange to say, in the history of the inoculation of secondary symptoms, those who firmly believe in it always succeed, while those who doubt its existence uniformly fail! Has Faith anything to do with the success of the result in those cases?

I have always been filled with astonishment at the contradiction which exists in the views adopted by the partisans of the inoculation of secondary syphilis. I find among them individuals who maintain in exaggeration the principles I promulgate; they maintain most staunchly that an individual who has once had syphilis cannot have it again; and in spite of this obstacle, they accept as facts the inoculation of secondaries which Wallace professes to have effected in persons who at the period of the experiment were affected with syphilis in full progress of development. You are aware that during the late discussions that have arisen on the communicability of secondary symptoms, some experiments have been made in Paris on this subject; and I must acknowledge that, as a result, I have seen magnificent specimens of indurated chancres, with their systemic irradiation, but what I have not seen is the source from which the pus which effected the inoculation was derived.

I have asked from what pathological conditions this inoculating matter has been obtained; and I have been informed that it was taken from condylomatous surfaces. You must recollect, however, that there are two kinds of condylomata, the primary and the secondary. In M. Trousseau's patient you have an example of the primary condyloma, which is but a transformation of the indurated chancre itself, and possesses a character which the secondary does not,—viz., the presence of the lymphatic glandular enlargement. Now, while such a difference exists between these two forms of condylomata, has the differential diagnosis been carefully made out in those cases where the infection is attributed to the communication of secondary syphilitic affections? To which, No, can be the only reply; for the partisans of this doctrine acknowledge themselves, that it is not possible to distinguish the *primary* condyloma from the *secondary*.

After having for a long time waged war with the views of those who accept the inoculation of secondaries, having for a very long period fought most loyally against it, I to-day make the following profession of my faith. To me the primary sore continues to be the essential and necessary source of contagion: as a very limited exception to that law, it seems that secondary symptoms may also possibly be transmitted, for facts would seem to prove that such is sometimes the case; but while up to the present time it is the condyloma alone of all the secondaries which has been inoculated, you should recollect that the condyloma is from its nature and its early period of appearance, the form of affection most closely allied to the chancre itself. It is, in fact, one of the first manifestations of syphilis, and we know further more that the chancre itself may be transformed into this condition.

Some individuals have gone further still, and believe, as far as one may judge, not only that all secondary affections are syphilitic, but that the very blood of a syphilitic patient may communicate contagion. A great man has certainly said that "everything is possible," but we desire to leave this wide field of possibility and confine ourselves to the more limited enclosure of certainty. If we admit that the blood of syphilitic patients can communicate syphilis, we return to the views of the fifteenth century, and if such is the case, I see no reason why we should not with equal readiness admit that we may be infected by shaking hands or inhaling the breath of a syphilitic patient. During thirty years I performed all kinds of operations upon patients affected with syphilis, during the same period I have met with wounds in them of every kind, and I declare that I have never seen them become affected by the diathetic condition which was present.

Some have made experiments to show the contagious property of the blood; Waller having scratched the thigh of a patient, dressed the wound with lint soaked in the blood of a syphilitic patient. At the end of a few hours, tubercles appeared

in the wound now in process of cicatrization, and it was at once concluded that the blood of syphilitic patients possessed contagious qualities. But the strange feature of the case was that a tubercle exactly like that on the thigh made its appearance upon the shoulder; the syphilitic blood he it remarked had not been applied to this part, and it could not be the result of any general infection due to the syphilitic blood, for the time which had elapsed between the period of inoculation of the thigh and the appearance of the tubercle was not sufficient for the incubation of the syphilitic taint. My friend Dr Diday of Lyons, before the distinction of chancres into infecting and non-infecting had been exactly made out, was engaged in experimenting upon measures calculated to prevent the occurrence of the syphilitic infection, and for this purpose he inoculated all his patients affected with chancre with the blood of persons suffering from syphilis. And what was the consequence? After subjecting a great number of individuals to this experiment, one only was affected with syphilis, and this one had suffered from an indurated chancre; while the rest who were affected only with soft chancres, remained free from every symptom of syphilis in spite of the inoculation with the syphilitic blood. On three separate occasions a professional brother (d'Albi) inoculated himself with the blood of a person the subject of syphilis, and no results followed. Perhaps it may be said that certain individuals are refractory to the influence of certain viruses; do not, however, trust to any such doctrine, for I am positive that had my professional brother whom I have just mentioned been inoculated with the indurated chancre he would have fared very differently. It seems, then, that up to the present time, inoculations with the blood of syphilitic patients have produced no results, and that the pretended instances of success are rendered valueless from the admixture of obvious intrinsic errors.

But we may now proceed to inquire whether the same holds good in regard to vaccination practised with lymph obtained from a syphilitic patient. Does the lymph in such a case become altered in consequence of the existence of the syphilitic diathesis, and communicate this condition to a patient who has hitherto been exempt from the disease? This is, in reality, the question raised by the fact brought before your notice in the patient of M. Trousseau. And here we must decide whether the case of this young woman, so far as we are acquainted with it, is so completely surrounded by safeguards against error as to enable us to adduce it as an example of the communication of syphilis by vaccination. It seems to me that it certainly is not. Observe what the facts are: A young child, a patient in the hospital, is taken to the Academy, and is there vaccinated; the pustules develop themselves regularly; the lymph is employed to vaccinate four other children, in whom everything follows a normal course. The same vaccine matter is employed to vaccinate this young woman: no pustule appears (for she had been already vaccinated). She leaves the hospital for a month, and is not under observation during this period. One of these days she again returns: two of the six punctures which had been made on the arm have become indurated chancres: and you say it is the effect of the vaccination! But recollect this woman is married. May she not, then, during the period of absence from hospital, have contracted the syphilis, and the arm been the part by which it has been introduced into the system? If it were so, would there be anything very unusual in such a train of circumstances? Some time ago a lawyer consulted me in regard to a swelling as hard as cartilage, situated in the lower eyelid near the inner canthus. The neighbouring lymphatics were enlarged, and his body was covered with a roseolar eruption. I had no hesitation in saying to him: You have put your finger in your eye, and you have syphilis. He told me how it came about: when in company with a female, it seems he had allowed his hand to wander where it should not, and shortly after, being seized with an intense itchiness in his eyelid, he had scratched it with his fingers, and thus it was that this honourable lawyer had caught a chancre in his eye! One day, along with Marjolin and Chomel, I saw a Russian prince who had an indurated chancre on the prepuce. He declared positively to me that he had never touched a female; and I had reason to believe in his statement. In vain I sought for the source of this affection, but it remained inexplicable. I am, in fact, surprised that facts of this kind do not occur more frequently. Consider for a moment what takes place daily. A person suffering from chancre stops in the street at a urinal, where he satisfies a pressing desire to micturate; and, having re-applied the dressing to the sore, he continues his walk, his fingers soiled in all probability with the contagious virus from the chancre. Before he has gone far he meets a friend, with whom he shakes hands on meeting and at parting; and in so doing, the virus changes hands from one to the other. And who will say what results may then occur! It may be applied to the eyes, the mouth, nose, or even the penis of

this individual, and thus produce its usual effects. Such facts may serve as illustrations in proof that the communication of syphilis may be effected in other ways than by sexual intercourse.

The epidemics of syphilis supposed to be attributable to vaccination do not seem to me to possess more authentic claims to such a mode of transmission than the instances we have presented to your notice. For instance, that of Cerioli in 1827, when a little girl found on the public road was vaccinated, and the pustules which resulted were employed to vaccinate all the children of the district. The little girl was perfectly healthy, the vaccination was regular in its effects, and no syphilitic symptoms manifested themselves in her after the vaccination. Among the children vaccinated from this perfectly healthy child, some remained perfectly free from syphilis, others of them were attacked, and the vaccination was supposed to be the cause!

We may very fairly put the question to those who support this doctrine, If the vaccine matter communicates syphilis, what part of it constitutes the contagious principle—is it the blood, or is it the purulent fluid? My friend M. Diday has published an admirable argument disproving the contagious properties of syphilitic blood; and several fellow-labourers in the same field, not less distinguished, have stoutly denied to the purulent fluid the power of transmitting syphilis. The result of these contrary arguments is, of course, equal to nothing; and this doctrine, which is thus destroyed bit by bit, always puts me in mind of the two dogs (cats?) who fought till nothing of them but their tails remained.

In our art, where everything is characterized by action and reaction, we are constantly witness to facts the least expected; and it is curious to note that, at the very time when vaccination is found guilty by some of producing syphilis, a gentleman comes forward who recommends vaccination as a means of curing syphilis. Latterly, the inventor of this new method, who is an inspector of rivers and forests in Russia, has published a memoir upon the subject. It seems, too, on good authority, that the Russian doctors have taken up the subject warmly. So we may expect before very long to have voluminous memoirs on the subject of the cure of syphilis by vaccination.

The account of Cerioli is not the only one which has been published as illustrating the transmission of syphilis by vaccination. Recently another similar epidemic of syphilis has occurred at Rivolta, but its recital is no more convincing than those we have just considered. A child was inoculated with vaccine matter preserved in tubes; the pustules which formed were employed for the vaccination of several other children, and the matter from one of these served to vaccinate several more. Syphilitic symptoms made their appearance in a certain number of the children vaccinated; the cause of this remained unknown; some one thought it might be the vaccination, and it accordingly got the blame. Such being admitted to be the case, one of two things must be taken for granted. Either that the vaccine lymph was syphilitic, or the first child which transmitted it to the other was so. Now, by the evidence of Dr Albertetti, both the child Chiabrera who was first vaccinated and its parents were perfectly healthy, so that we presume we may assume that it could not be the child, as it could not transmit an affection from which it did not suffer. If, again, it was the vaccine lymph which was the source of the infection, how comes it that Chiabrera escaped infection? Besides this view of the matter is for other reasons untenable, for the liquid contained in the tubes could only have transmitted a constitutional affection, and this could not be in a state of activity at the period indicated in the details of the case. We believe with Dr Albertetti that there are two things to be considered in the epidemic at Rivolta; on the one hand the vaccination, on the other the occurrence of syphilis in some of the children vaccinated. These two facts do not occupy the position of a regular sequence; they seem to us to be connected together by mere coincidence, and not at all in the position of cause and effect.

In considering the present condition of the question, it appears impossible to arrive at absolute conclusions. Anticipating the development of new facts which may prove of immense importance in this question, we are in no hurry to rush to a conclusion, we rather desire to wait and examine the matter impartially. The question which is about to be raised is one of vast importance, for if it be true that vaccination can transmit syphilis, then vaccination is done for. For who, pray, will run the risk of being affected with the *great* to escape the *small* pox? On whom will you place your dependence to establish the purity of the vaccine lymph? On the morality of the parents? But when you have most minutely examined the father and mother,

¹ There is no vaccine matter, however carefully removed from the vesicle, which, on microscopic investigation, will not be found to contain blood-corpuscles.—P. H. W.

when you have found them perfectly healthy, how can you be certain that the vaccine lymph obtained from their children is not infected? A stranger might come into the household. Assurances of morality will not suffice in science. Have you any better guarantee in the appearance of the pustules? Certainly not; for the partisans of contagion declare that the pustules may be as good and as regular as in the normal condition. Does their duration afford any criterion? What possible difference can a day more or less make? The pustule is infecting or it is not. But do you not avoid all risk in taking the purulent fluid of the pustule and avoiding any admixture with blood? Unfortunately, contagionists are far from being at one as to what part of the vaccine fluid is the source of contagion. Some believe it to be the pus, others the blood, some esteem both equally contagious. Will you be guided by the age of the infant and avoid taking lymph from any child till it is beyond the age for the development of hereditary syphilis? We know very well, however, that if syphilis usually occurs in infants within the first few weeks after birth, there are plenty of exceptions to the rule. There are undoubtedly cases in which the manifestation of the symptoms is delayed for several months or even years after birth. Where, then, if age is to be a criterion will you place your limit?

In the impossibility which in such circumstances would exist of being able definitely to say that we possess good vaccine lymph, nothing could remain for us but henceforth to give up vaccination; but, before renouncing the benefits which the immortal discovery of Jenner has conferred on us, let us calmly and coolly reflect on the facts which spread themselves before us: let us examine them without the bias of preconceived ideas, so as to arrive some day at an impartial conclusion. But to-day, and with it I must say good-bye to you, the only answer which can be given to the question, "Can vaccination transmit syphilis?" which has been proposed for consideration, is a very large mark of interrogation.—*Gazette des Hôpitaux*, Nos. 11 and 12, January 1862.

Part Fourth.

MEDICAL NEWS.

JOTTINGS FROM THE PARISIAN HOSPITALS.

BY WILLIAM TURNER, M.D. (EDIN.)

IN fulfilment of the promise given in a letter which appeared in last month's Journal, I proceed once more to detail a few of the jottings I happen to possess of the medical news of Paris. In the first place, however, I must premise that there is nothing specially *new* to communicate; nevertheless, what few facts I have to give, may perhaps prove not altogether devoid of interest.

The chair of obstetrics in the Parisian Faculty of Medicine has just become vacant, owing to the death of Moreau, the eminent accoucheur, who was a man of undoubted ability. I have not yet heard who is likely to become his successor. I am told that Pujot, for reasons into which I need not enter, has no chance of it; though, from his position in the *Hôpital des Cliniques*, one would naturally expect him to be the most likely man. Apropos of Pujot, I may say he is one of the finest lecturers on the clinical staff. I may also add that he is not the successor of Dubois, as I inadvertently stated in my letter, but a *professeur agrégé*, who performs the duties of Dubois at the *clinique d'accouchements*; the name of the latter being still retained on the roll of clinical teachers. Pujot is rather tall, and a very handsome man, of light figure, active and energetic in his movements; he has regular features, a closely shaven face, and long flowing hair of a gray colour, though he is still

comparatively young. He possesses a considerable amount of *esprit*,—in fact, is quite theatrical in his manner,—certainly the most vivacious Frenchman I have seen amongst the members of the profession in Paris; and, I should say, possessed of too great a power of sarcasm to be at all a favourite with those who may be unfortunate enough to smart under its influence. While following his *service* one day rather an amusing incident occurred, illustrative of the many misapprehensions to which the foreign student is liable, while still comparatively ignorant of the language. A young friend, recently arrived from England, who was eager in the pursuit of knowledge, had planted himself at the bedside, when he was immediately pounced upon by Pujot and told to listen to the *foetal heart*, which he proceeded to do by pressing down the stethoscope rather too heavily. The professor immediately began to exclaim in his voluble French—“*N'appuyez pas!*—*Vous appuyez trop!*” whereupon the stethoscope, with the utmost *sang froid* on the part of the innocent offender, was applied still more forcibly, from his having put exactly the reverse interpretation upon the remark. Pujot now began to get excited (and you are aware that it does not require much to excite a Frenchman), and to exclaim still more emphatically,—“*N'appuyez pas!*” but this only had the effect of making the stethoscope sink deeper into the abdominal walls. Fortunately, at this juncture, a French student came to the rescue, by suggesting to the professor, bewildered by the supposed stupidity of his *élève*, that the gentleman did not understand French; upon which, he shrugged his shoulders and endeavoured to exercise the virtue of patience as best he might.

I have been attending the course of Claude Bernard on Experimental Physiology; his prelections are given twice a-week in the *Collège de France*. He is rather tall, and graceful in his bearing, with a thoughtful cast of countenance which is very pleasing, and bears the stamp of intellectual power. His hair is long, dark, and thinly scattered, with some baldness on the summit. He is a man whose *tout ensemble* is remarkably prepossessing, but whom it is impossible adequately to describe in the meagre sketch which my limited space permits me to give. Though, in one sense, an eloquent speaker, his elocution is of such a peculiar nature as to render his lectures rather difficult of apprehension. This is specially the case when he is elucidating some abstruse point; he then seems at first to labour for utterance; this hesitation, however, is soon overcome, and he finishes his remarks with great rapidity and fluency. Up to the present time he has been engaged in describing the physical and vital properties of the elementary tissues; and, latterly, his lectures have been more especially interesting, as he has been dwelling upon the nervous and muscular forces, the distinctions between them, etc., and enforcing his arguments by a series of convincing experiments upon the unfortunate frog species.

A few remarks on some of the most interesting cases which I have seen in the hospitals may perhaps not be out of place, inasmuch as they may serve to illustrate French practice.

To begin with our old friend Maissonneuve. The first case, I think, is characteristic of the genius of the man, viz.,—Amputation of the forearm by the use of the *flèche*. I did not see it myself, as it occurred in summer, but the details have been furnished to me by a friend who was present on the occasion. The first step in the operation was the breaking of the bones, which was accomplished in the following manner: two blocks of wood at a short distance from each other were placed *upon* the arm, then a curved iron bar was passed

beneath it at the part corresponding to the interval between the blocks, while a small chain extended from one end of the bar to the other *over* the arm, and was attached to a screwing apparatus, by means of which the bar was gradually forced upwards, and counter pressure was made upon the blocks, until at last the two bones were compelled to give way; this was done without chloroform. The *flèches* were then introduced into the flesh in a circular manner round the circumference of the arm. The patient succumbed in about a day thereafter. The amputation was performed for some affection of the hand, from the effects of which the patient would have died in a short time at any rate. What was the object in performing the operation in this somewhat novel manner, my friend could not inform me, unless it was as an *experimentum crucis*. He has a case in the wards at present, showing the advantages to be obtained by the use of Malgaigne's *griffe* in fracture of the patella. An old woman, æt. 59, came under the care of his predecessor for transverse fracture of the patella of the left knee, for which the *griffe* was used. Union is now complete, leaving, as the only trace of the previous existence of the fracture, a small notch on the outer side of the bone, and a slight groove across its surface, but at the inner side not the slightest vestige of the injury,—as Maissonneuve remarked, "*Un resultat magnifique!*" He advocates warmly the use of what he terms the "*ligature extemporanée*" in fistula in ano, in the removal of polypoid tumours, especially from the uterus, and, in fact, in almost all cases where the *écraseur* could be used. His reasons for preferring it to all other means are, that it is speedy, saves bleeding, and, above all, is a great preventive against *intoxication purulente*; doubtless a point not to be disregarded in Parisian hospitals possessed of such a vile atmosphere. The ligature may consist of metal, cord, etc. The instrument is small and portable, and can be easily carried about in a large pocket-case. It seems to be a simplified modification of the *écraseur*. It is very simple in construction, consisting of a grooved steel rod, with a circular aperture at one end and a screw at the other, which gradually withdraws from the opposite extremity a hook that slides along the groove. The ends of the ligature which has been applied to the fistula or tumour, as the case may be, are passed through the circular aperture and fastened in a simple knot; the loop thus formed is thrown over the hook, which is then gradually withdrawn from the tumour, etc., by the screw at the other end. When the hook has reached the screw end, it is again replaced as at first, and commences its course *de novo*, another knot having been placed on the ligature nearer the tumour, and so on, till the operation is completed. I have seen several cases of fistula in ano thus operated upon successfully—the ligature consisting of iron wire. In one case, by means of a thick cord, he removed without difficulty, and with very little hæmorrhage, a large polypoid tumour of the neck of the uterus, consisting apparently of the mucous lining of the organ and vascular tissue. The patient recovered without a single bad symptom. By this process a fistula is cut, or a polypus removed in a very brief space of time, and with very trifling hæmorrhage. Finally, in regard to Maissonneuve, I must say, there is much advantage to be derived from following his visits, as you see a great deal of surgery, much of it of an experimental nature. Moreover, all the dressing is done by himself, and that in a very masterly manner.

Nélaton is apparently a man of sound practical sense, whose surgery stands out somewhat in contrast to that of the preceding teacher. The following cases will illustrate his practice:—

A short time ago he removed a carcinomatous mass which extended upwards about two inches into the rectum of a man of rather more than middle age. He first made a straight incision along the posterior wall of the rectum down to the anus, then two semicircular ones around that aperture on the external surface, and afterwards removed the mass by dissecting gradually from behind forwards, ligaturing arteries as he proceeded. It was found, however, that the carcinoma was so inseparably connected with the prostate as to render it incapable of complete removal—a fact which of course modified the prognosis, but which was not ascertainable before operation. So far as the immediate effects of the operation are concerned, the man has as yet done well.

Not very long ago he showed his class the results of a recent visit to London, in the form of two multilocular ovarian cysts which he had seen excised by Baker Brown, expressing at the same time his intention of performing the operation on the first opportunity that presented itself, and stating his belief that it appeared to him sufficiently rational and successful to warrant its adoption. The attention of French surgeons is being once more directed to the long neglected operation of ovariectomy. Nélaton, however, stands in a minority, Velpeau and others, I believe, still considering it impracticable. Accordingly, last Sunday the operation became for the first time in France a *fait accompli*. It was performed by M. Demarquay (Nélaton and Troussseau being present) upon a young woman, æt. 19, who was removed previously to the operation to St Germain-en-Laye, in order that she might escape the prejudicial influences of the bad air of the city hospitals. The operation was performed after the ordinary English method. The incision was eight centimetres (a centimetre is equal to about one-third of an English inch) in length, beginning beneath and to the left of the umbilicus, and extending nearly to the pubes, parallel to the linea alba; no ligatures were required to the pedicle. On the second day after the operation, the patient had a slight febrile attack, accompanied by vomiting, which, however, soon passed off; but in consequence of which the clamp dropt off, and the pedicle receded into the abdomen. She seemed again to be doing as well as could be desired until Wednesday, when she suddenly expired shortly after mid-day, without having previously displayed any symptoms of peritonitis or other serious affection. The cause of death I have not yet ascertained. Nélaton states, that in such high estimation does he hold this operation, that the unfortunate termination of this case will not deter him from attempting it for himself at the first opportunity.

Ten days ago the same surgeon gave a most interesting lecture on the *fibrous tumour of the iliac fossa*, in connexion with a case at present in the wards. As he stated that it is as yet little known to the profession, and has not been described, a short *résumé* of the lecture may perhaps not be uninteresting:—

This tumour, he said, occurs usually in young women who have borne children, but has never been seen in man—its origin probably depending on the genital peculiarities of the female sex. It generally occupies one or other of the iliac fossæ, close above Poupart's ligament, and is attached by a fibrous band to the ilium (in the present instance to the anterior superior spinous process). It is single, hard, and elastic; its growth is slow but steady; the pain is not great but continuous, afterwards assuming a lancinating character, and extending to adjacent parts, especially the leg. It may be pushed upwards, but cannot be depressed on account of the fascia; it may be moved outwards, but not inwards, owing to its iliac attachment—this latter mark being characteristic.

It is developed in the cellular tissue between the iliac fascia and the peritoneum. The skin over it is natural in colour and consistence. The diagnosis is made out as follows. It is distinguished,—

1st, From *uterine fibrous tumours* by its solitary nature; its connexion with the ilium; its mobility upwards and outwards, and its immobility downwards and inwards, etc.; while uterine fibrous tumours are movable in all directions, are connected with the uterus, and movable with it, etc.

2d, From *syphilitic tumours of the abdominal wall*. These are fixed and hard; the skin covering them is discoloured and slightly œdematous, as may be seen perceptibly by prolonged pressure,—say for a minute; and there is further the presence of tertiary symptoms.

3d, And, lastly, from *ganglionic tumours*, which are always multiple and soft.

The treatment is *nil*, unless the pain be great, and the growth rapid, when the tumour can best be removed by making such an incision as that adopted for ligaturing the external iliac artery, and carefully separating it from its cellular attachment to the peritoneum. Nélaton once, in performing this operation, was unable to separate the tumour from the peritoneum without making an aperture in the membrane large enough to admit a crow-quill; he observed, however, that a piece of mesentery adapted itself to the opening, and he therefore dressed the wound carefully. The patient recovered without a bad symptom.

On Monday last he showed the preparation obtained from a case which is but rarely or almost never seen, presenting three pathological conditions illustrative of three several modes in which Pott's disease of the spine may originate. The disease was situated in the lower part of the dorsal region, involving three vertebræ. The body of the highest vertebra affected, presented a small oval cavity opening anteriorly, and lined by a distinct membrane; this Nélaton believed to have been the seat of encysted tubercle, which had undergone softening and disintegration, followed by evacuation and the formation of subperitoneal abscess. The following one was infiltrated with tubercle at its upper and posterior third, where the process of separation from the healthy osseous tissue was rapidly advancing, and the formation of a sequestrum was in progress. This case illustrated still a third form of origin of Pott's disease; in these two previous instances the affection was tubercular, and affected the bodies of vertebræ, but in this next form the intervertebral substance had undergone previous inflammation, terminating in ossification (of a spongy character) of its substance, and consequent fusion of the bodies of the two vertebræ, with the exception of a small portion at the posterior part. There had been no pressure on the cord, the vertebral column having retained its integrity of form. The patient died from the exhaustion produced by the profuse subperitoneal suppuration that resulted, as before mentioned, from the discharge into the subperitoneal tissue of the small and disintegrated encysted tubercle. After this he introduced M——, who proceeded to explain his invention of a new form of ophthalmoscope, to which he has applied the principles of the stereoscope in such a manner as to enable the surgeon to bring the advantages of *binocular vision* to bear upon the diagnosis of the deep-seated diseases of the eye, enabling him not only to discover the presence and extent of abnormal conditions of the organ, but also to ascertain the exact configuration of the affection.

Trousseau I conceive to be the most enlightened of the Parisian physicians. He has done much to improve French medical practice. In the hospital his practice accords very much with that of the late Dr Graves of Dublin, whose work on Clinical Medicine he holds in very high estimation, and to a translation of which into the French language he has written an introduction. He does not seem to confine himself to any special branch of medical practice, but appears to apply himself with equal success to all. He seems partial to the use of turpentine in all pectoral cases, and to belladonna in nervous affections, especially of a convulsive character. I understand he is an excellent English scholar. He has also had several interesting cases, into which I have not time to enter further than what is given in the few following details. There is a case in the wards of puerperal convulsions, being the second of that class within the last few days, and which he is treating by the administration of chloroform. This, he says, should be given in small whiffs, frequently repeated, so that the patient might be more or less under its influence for about twelve hours. After that period, it should be given at more distant intervals. Both cases are doing well.

About the middle of last month M. Ricord, at the request of Trousseau, gave two clinical lectures on a very interesting case of a peculiar nature which had come under the care of the latter; but of which I can only give the most hurried outline. A young woman, æt. 18, was admitted into the wards on 6th September 1861, with metritis. She had been vaccinated in infancy, and bore on both arms manifest traces of the fact. In the following month an epidemic of variola broke out in one of the wards, and in the beginning of October, therefore, the patient, as a precautionary measure, was revaccinated along with four children; the vaccine matter for all being obtained from the healthy child of an equally healthy mother. In these five infants (that is, including the one that supplied the lymph) the vesicles ran a normal course, but in the young woman, on the contrary, the vaccination did not succeed, which was not surprising, as she had been previously vaccinated. At the site of the lancet wounds there was slight swelling, and a small inflammatory areola, with intense itching; but in the course of four or five days after vaccination there were no traces left of the transient irritation produced on the skin. On the 9th November she left the hospital without anything remarkable presenting itself; but in the beginning of December there was found on the left arm, at the site of vaccination, two ulcers covered with thick stratified crusts, closely resembling those of rupia. These ulcerations were then considered as being the result of a vaccination of long incubation, late appearance, and abnormal progress. A month later (10th February 1862) she was again admitted for the uterine affection. At this date the supposed vaccine ulcerations had not cicatrized, but went on to suppuration, and the formation of an indurated crust; and in the axilla was found "*une adénopathie multiple, indolente*," and on the body, arms, and chin, a roseola, the specific nature of which could not be mistaken. According to the patient's statement the roseola had existed since the middle of December 1861, *i.e.* six weeks after the inoculation. The report of the case went on to say—let us add, that there was headache, "*adénopathie occipitale*," and the diagnosis of the diathesis will be written in plain letters. Ricord having been requested by Trousseau to examine the patient, did not hesitate to give his diagnosis as follows:—" *Ulcus elevatum*, double (variety, indurated chancre) upon the left arm, *pleiade ganglionaire*, specific roseola, type of con-

stitutional syphilis having had its origin, its entrance, in the two ulcerations of the left arm." Ricord's two prelections were founded on the preceding case, but as it would be useless to detail any one part of them, and time does not permit me to give a *résumé* of the whole, I must content myself with the hope of being able to do so in my next communication.

I must now, in conclusion, make a few remarks on the ventilation of the hospitals, on which there has been considerable discussion for some time past in the medical world here. Some member of the profession, who had been to London, and who, from what he saw there, was so unfortunate as to be honest enough to make a comparison between the Parisian and the London hospitals in a manner unfavourable to the former, has drawn forth from others of the profession (who, I believe, had *not* been there) the grossest misstatements; such as, that the London hospitals are only lighted from one side, and that they all contain dissecting rooms, etc. A great many medical men here not being able to see that their hospitals are infinitely worse than the English, are even trying to argue that they are superior to them. I must say for myself that the ventilation here is most execrable (in many of the hospitals at least). I never return from the visit in the morning without experiencing more or less *malaise*, one's integumentary surface feeling as if baked, the blood at boiling point, and the head in a most uncomfortable condition. A physician in one of the hospitals loses an infant every now and again from sclerema, and I heard it stated by one of the surgeons in the same hospital (in whose wards I may say that erysipelas is *raging*, the cases of it are so numerous) that 95 per cent. of the deaths after operations and injuries took place from erysipelas. But how can it be otherwise, with the enormous stoves which are kept continually burning in the wards, while all the windows are generally most religiously closed?

By the way it is said, with how much truth I know not, that portions of the Hôtel Dieu north of the Seine are to be pulled down, so as to allow the venerable pile of Notre Dame to stand out unobscured (as it at present is) in all the glory of its magnificent architecture. Let us hope that such is the case, and that in the new hospital to be built in lieu of it more attention will be paid to the all important subject of ventilation.

PARIS, 10th February 1862.

IMPORTANT TRIAL FOR ALLEGED MALPRAXIS.

A CASE deeply affecting the interests of the medical profession was decided on the 14th of February in the Court of Session; and as it illustrates the hardships to which medical men are subjected, and the inefficiency of the recent legislative enactments, we propose to lay before our readers a brief statement of the facts.

On the 3d of May 1859, Mrs Agnes Mason, wife of a gatekeeper at Bedley Lodge, near Glasgow, fell on her hand and injured her arm. Mr George Oliver, surgeon, was sent for, and, after a careful examination, declared the radius to be broken above the wrist. He accordingly set the fracture and put the limb up in splints. After he had seen her for several days, to avoid expense, the surgeon was told to discontinue his visits unless when sent for. On the 1st of June the splints were removed, the patient, according to her own account, held up her arm for examination, and Mr Oliver declared it had

• “knitted beautifully.” A strengthening plaster was applied, and the arm was recommended to be used moderately.

On the 1st of July, as the patient was not satisfied with the state of her arm, she consulted Loudon Cranstoun, a bone-setter at Kilmarnock. He at once told her there had been no fracture, but that dislocation at the wrist and shoulder existed, which would require some weeks’ preparation before reduction could be effected. The application of cloths dipped in cold water and covered with gutta percha was the preparatory process suggested by Cranstoun. As it is a novelty to have a bone-setter giving evidence for the pursuer in a court of justice, we publish his examination in *extenso*,—

“I remember seeing pursuer at Kilmarnock on the first Friday of July last; she came, she said, with a broken arm; I examined the arm, and found it was a dislocated wrist and dislocated shoulder. I found no break where it was said to be, which was in centre of arm. I gave her my directions to prepare the arm for being put into joint. Next time I saw her was in Glasgow, a week or a fortnight after. She showed me her arm, and I said it was not prepared yet, and that she was not to return till that day fortnight. She returned at that time, and I put the arm in joint both at the wrist and shoulder. There was no bone broken in pursuer’s arm that I felt. I have done nothing else but set bones and joints for the last thirty years, and my practice has been very extensive. I am quite certain pursuer could not use her hand; she could not move it up and down before I set it. She can use it now, but the fingers are a little stiff, which is partly her own fault. If the accident occurred some time before pursuer came to me it would take longer time to relax the muscles and prepare for the operation, than if she had come at once, or got it done at once.

“*For defender.*—I don’t pretend either to be a physician or surgeon; I confine my business solely to setting joints and bones.”

Immediately on her return from Ayrshire, in the beginning of July, Mrs Mason met with a Dr MacDonald, a medical practitioner in the neighbourhood, who examined her arm carefully, and made himself thoroughly satisfied that there had been no fracture; but he did not discover the dislocations, though he saw her three or four times. As it is also a novelty to have a regularly qualified medical man endeavouring to the best of his ability to corroborate the evidence of a bone-setter, we also give this witness’s evidence in full,—

“I was formerly at Chryston, near Bedley. I remember meeting pursuer in end of June or beginning of July, shortly after her accident. She told me she had got her arm broken, and that it was very stiff and painful, and asked if it was my opinion that it had been broken. I examined the bones carefully, and found there had been no fracture of the radius or ulna, the bones of the forearm. I was quite satisfied there had been no break. Supposing there was no break, putting on splints was not proper treatment for a dislocation. In this case it resulted in abscess. Three or four weeks was sufficient time to ascertain whether the accident was a break or dislocation.

“*For defender.*—The abscess was on the front of the arm, a little above the wrist. I prescribed for pursuer at the time, and saw her three or four times, once along with Dr Ledworth of Manchester. I think these visits were in July last. I did not know pursuer had consulted Mr Cranstoun. I think she told me she had seen some medical men in Ayrshire. I only know defender from sight, and having been engaged in a similar case to this. When at Chryston, I was medical man at Garnkirk Works, which I resigned, and was succeeded by defender. I never said to the manager of Garnkirk Works, that if my successor did not take my house, I would have war to the knife with him. I have given evidence against defender in one case similar to this case.”

All that is necessary to enable the reader to form an estimate of the character of Dr MacDonald's evidence is to recollect the fact, that during his treatment, the arm, if dislocated at all, must have been at that very time out of joint, and yet how carefully he suppresses the information of his not having recognised any dislocation, which would at once have put a stop to the case; for we cannot suppose that any man having any regard for his own character as a surgeon, would have attended the case for days without attempting reduction, had he discovered the dislocations.

On the 6th of July, about eight weeks after the accident, Mr Oliver accidentally met in Glasgow his former patient on her way to visit Cranstoun. His surprise was great when, for the first time, informed that he had been treating the case improperly, and that a double dislocation still existed. He tried to persuade her to go with him to Dr Lyon, the senior surgeon at the Glasgow Infirmary, but she would not forego her visit to the bone-setter. Next day, however, he succeeded in getting her the length of the Infirmary, and Dr Lyon examined the arm and declared the injury to have been a fracture of the radius above the wrist, and that it had been properly treated. The following is Dr Lyon's evidence:—

"I am Fellow of Faculty of Physicians and Surgeons in Glasgow, and have been in practice for forty years. I remember being consulted by pursuer and defender, some time last summer, I think. It was to give an opinion as to the arm of a female—I think it was pursuer, but am not sure—whether it had been well treated or not. My impression now is, that I thought it had been properly treated. I have now examined pursuer's left arm, and I am of the same opinion now as I was then, that the arm was properly treated as a fracture. I would say there is every appearance of there having been a fracture in the circumstances. It was quite impossible there could be a dislocation at the time I first saw it; besides, it is very rare for a dislocation to occur at the wrist. I think pursuer mentioned some such circumstance as that she had consulted Mr Cranstoun; and I think either she or defender stated Mr Cranstoun said there was a dislocation. To ignorant persons such a fracture is very apt to be taken for a dislocation; but pursuer's arm had then no appearance of having been dislocated, nor has now. I know Mr Cranstoun, and that his interference in the Hospital has often done much mischief. I know this as a surgeon. When splints are applied, it is not unusual for them to cause excoriation, when there is a great deal of swelling; and there is often a great deal of swelling in an injury such as I conceive the pursuer to have received.

"*For pursuer.*—It is the radius bone of pursuer's arm that has been broken. I point out the place where pursuer's arm has been broken, less than an inch above the wrist; there is no feeling of a fracture at any other part of the arm.

"*Re-examined.*—I have been from thirteen to fourteen years surgeon to the infirmary.—I am aware that witness Risk is a Fellow of the Faculty of Physicians and Surgeons in Glasgow; and I know witness MacDonald of Maryhill is a regular practitioner, but don't know from where he has his diploma."

Thirteen days after this examination, viz. on the 20th of July 1859, upwards of eleven weeks after the injury, the dislocations of the wrist and shoulder were alleged to have been reduced by Cranstoun, who was assisted by three men, the patient stating, "I suffered great pain in this operation." The third day after Cranstoun's manipulations the patient was seen by a witness hemming a handkerchief!!

This evidence, though cited for the pursuer, is about the strongest that could have been given for the defence, for no person at all conversant with surgery can be expected to believe that three days after the reduction of a double dis-

location at the shoulder and wrist, which had existed for eleven weeks, the arm would be in a state to admit of such a use being made of it.

On the 26th of December 1859, a summons was taken out in the Sheriff Court of Glasgow against Mr Oliver, "for gross carelessness or ignorance of his professional duties," in treating, as a fracture of the radius, dislocations of the shoulder and wrist; damages being laid at £100.

On the 24th of February 1860, the witnesses were examined, and the only further evidence to which we need allude is that of Dr Risk of Chryston, who was summoned for the pursuer. The following is his statement:—

"Pursuer called on me about two months ago, and showed me her arm. I examined her left arm, and found that if there ever had been a fracture it must have been at a very early period of her life. There could not have been one for a number of years. A surgeon should have seen at once whether it was a fracture or dislocation when the accident took place. If there was no fracture, but only dislocation, putting on splints, without having reduced the dislocation, was improper treatment. A dislocation ought to have been reduced at once; and such treatment must have caused great pain to the patient."

It will be seen that Dr Risk did not examine Mrs Mason's arm till about eight months after the injury, and we leave it to himself to explain to his professional brethren why he should assert that there could not have been a fracture for a number of years!

On the 19th November 1860, at the instance of the pursuer, Dr Easton of Glasgow was appointed to examine and report on the condition of the arm.

On the 28th March 1861, Dr Easton declined to act, as the question at issue was one of pure surgery; so Mr Lister, Professor of Surgery in Glasgow University was substituted.

On 19th April 1861, the pursuer declined to call Professor Lister, on the ground of inability to pay him a suitable fee.

[We have since been informed that the real ground for not taking his evidence was this:—Mrs Mason was sent *incog.* to the learned professor, and his opinion was asked with regard to the nature of the injury she had sustained. He at once stated that there were traces of a united fracture of the radius above the wrist; and, owing to this adverse opinion, we suppose it was deemed advisable to renounce citing him as a witness!]

On the 11th June 1861, the Sheriff-Substitute pronounced the following interlocutor in favour of the defender, Mr Oliver:—

"Having resumed consideration of this process, with the proof led, and having heard parties' procurators thereon, finds that, on 3d May 1859, the pursuer fell and fractured one of the bones of her left arm, that she sent for the defender, who set the bone, and treated the case properly as a fracture; finds that the pursuer's arm afterwards swelled and caused her considerable pain; but she has not proved that this was caused by any maltreatment of the defender. Therefore sustains the defences; assoilzies the defender," etc.

"*Note.*—The pursuer's case is, that when she fell she dislocated her arm, and that the defender, from ignorance and want of professional skill, mistook the dislocation for a fracture; but it would appear from the evidence of Dr Lyon, whose professional skill is undoubted, that one of the bones of her arm was really broken, and that the defender was right in treating the case as a fracture. Every opportunity was given to the pursuer to lead evidence to rebut that given by Dr Lyon, but she failed to adduce any such evidence."

This being appealed against, the case was again tried by Sheriff Alison, who

reversed the interlocutor, and decided against the defender, declaring it proved that the arm had been dislocated both at the shoulder and wrist!!

The following is a choice specimen of the learned Sheriff's decisions, and the note appended to it is, if possible, a still more forcible proof of the discrimination with which he sifted the evidence:—

"Having heard parties, etc.: Finds that the present action is brought against the defender, a professional surgeon, for damages on account of alleged gross want of skill in treating the female pursuer's arm, which was *dislocated*, as a *fractured* arm, whereby she suffered great pain and injury: Finds that the defender pleads that there was no unskilfulness on his part, and that the case was truly one of a broken arm, and had been properly treated: Finds it proved that the arm was dislocated at the wrist-joint and shoulder, but not broken at all; that when it was treated as for a dislocation by another man, Loudon Cranstoun, a bone-setter, the swelling was reduced, and the arm was set at the shoulder and wrist, and the pursuer shortly after got the use of her arm: Finds that the defender was sent for on 3d May 1859, who applied splinters and bandages, and treated it as a fracture, from which the pursuer suffered great pain, and that Cranstoun, the bone-setter, set the arm on or about the 20th of July, and that after it was set the pursuer soon became well, and got the use of the arm: Finds that there is not sufficient proof of any bones having been broken in the arm, or at least that the evidence thereanent is contradictory, and that the splints put on by the defender produced an abscess in the arm, which was attended with great pain, and greatly aggravated the case, instead of curing or relieving it: Finds it proved that the shoulder-joint was dislocated, and that nothing was done by the defender to set the joint, and that the defender's treatment of the arm, especially in not setting the shoulder, which was dislocated, amounted to *culpa lata*, and evinced such a want of medical skill as renders him liable in damages: Therefore alters the interlocutor complained of: Finds damages due, but modifies the same to £5, 5s. sterling, for which, with interest from the date of citation, decerns against the defender: Finds the pursuers entitled to expenses; appoints an account thereof to be given in; and remits to the Auditor to tax the same and report; and decerns.

"*Note*.—The examination of Dr Lister, who was substituted of consent for Dr Easton, was not taken, from inability, as the pursuers' agent said, on the pursuers' part, to pay his fee for the examination. The Sheriff does not think this at all likely, from the high character and standing of that gentleman; but independently of that, and of any evidence subsequently adduced to neutralize Dr Lyon's, the weight of the evidence seems to establish the fact, that the case, *ab initio*, was one of dislocation merely, and that the treatment of it as a fracture was erroneous. It is very material to observe that Dr Lyon, whose professional skill is well known, and is *omni exceptione major*, merely saw and examined the pursuer's arm *ex intervallo*, and did nothing to it, whereas Cranstoun, the bone-setter, and Drs MacDonald and Risk, the medical men examined for the pursuer, not only saw it, but operated upon it; and the former *set the arm after an interval of several weeks, when it was still dislocated*, and after it had been treated by the defender as for a fracture. Dr Lyon was apparently right in saying, on examining the arm, that he saw the marks of a fracture, although it is said by another witness, that this had occurred very early in life. But the material thing here is, that the defender *did not set either the wrist or shoulder at all*, which was done for the *first time two months after by Cranstoun*, after which the pursuer's arm rapidly recovered: Surely the *shoulder* at all events might have been set *in limine*, and that should have been done by the defender."¹

Any ordinary mortal would, we presume, have said to himself, This is a case to be decided entirely by the opinion of experts. The evidence is as follows:

¹ The italics are the learned Sheriff's.

Dr Lyon and Mr Oliver, both legally qualified medical men, and the former, an eminent surgeon in the habit of frequently seeing such cases, distinctly state, that no dislocations existed, and that the case was the ordinary and very common fracture of the radius above the wrist. Drs MacDonald and Risk say nothing at all about dislocations, though the former saw the patient four times before the alleged reduction took place, and once in consultation with Dr Ledworth of Manchester, and must have seen the dislocations had there been any, while the latter could not possibly give evidence on the subject, as his first appearance is eight months after the injury. The only man, therefore, whose evidence can be weighed against the two surgeons first mentioned, is Loudon Cranstoun, who mentions in his evidence that he confines his "business solely to setting joints and bones." It is possible that this ordinary mortal, whom we suppose considering the case, might not be aware that bone-setters thrive by calling almost all injuries dislocations, as, after a reasonable delay—preparing the muscles as it is called—by giving the limb some judicious manipulations, they can easily persuade a credulous patient that reduction has been effected; but, taking for granted his ignorance on this point, common sense would lead him to decide that justice demanded he should give credence to two respectable surgeons rather than to one bone-setter, however world-wide his reputation might be.

Holloway, Morrison, and Widow Welch have all acquired world-wide reputations, but we doubt much whether any one but Sheriff Alison would have adopted their opinions on medical subjects in opposition to those of well educated medical men!

On the 13th and 14th of February 1862, the case was debated in the Court of Session First Division, and the judges, without hearing the senior counsel for Mr Oliver, unanimously reversed Sheriff Alison's interlocutor, with expenses.

The following is extracted from the newspapers as their decision:—

"I don't," the Lord President said, "think the pursuer has made out her case. With the exception of Loudon Cranstoun's (the bone-setter) evidence, there is nothing in the proof to instruct her averments. Two doctors examined her arm at the time Cranstoun was treating it as for a dislocated wrist and dislocated shoulder, but neither of these gentlemen—viz. Dr MacDonald and Dr Ledworth—seem to have discovered any dislocation at all. At the time Dr MacDonald saw the pursuer, the dislocation, had it existed, should have been most palpable, for Cranstoun is said to have been then preparing the arm for being put into joint both at the wrist and the shoulder, but at that time had performed no operation. Cranstoun says he saw no fracture where it was said to be,—viz. in the centre of the arm. Now, the break was not said to be in the centre of the arm at all; it was nearer the wrist. On the other hand, Dr Oliver and Dr Lyon were the two medical gentlemen who first examined the pursuer's arm. Dr Oliver found a fracture, and treated the arm as for a fractured arm. He was right in doing so, for Dr Lyon found traces of a fracture which had recently existed, and the evidence preponderates to this, that there was a fracture and no dislocation. I am of opinion that the Sheriff-Substitute came to a more correct decision upon the evidence than the Sheriff-Principal; and I am, therefore, for advocating the cause, reversing the interlocutor of the Sheriff, and sustaining the interlocutor of the Sheriff-Substitute, with additional expenses in both Courts."

And the decision of the Court is given in the following interlocutor:—

"*Edinburgh, 14th February 1862.*—The Lords, on report of Lord Kinloch, Ordinary, and having heard counsel for the parties, and having considered the

record, proof, and whole process, advocate the cause, recall the interlocutor of the Sheriff-Principal of date 29th July 1861, and that of the Sheriff-Substitute of date 11th June 1861: Find that it is proved as matter of fact,—1st, That on or about 2d May 1859, the pursuer met with an accident whereby one of the bones of her left arm was fractured; 2d, That she sent for and obtained the professional services of the defender, and that he treated the case properly as a fracture; 3d, That the pursuer's arm afterwards swelled, and caused her considerable pain: Find that it is not proved that the swelling and pain were caused by maltreatment on the part of the defender, or that there was on his part any maltreatment, negligence, or want of skill; Find, in point of law, that the defender is not liable to the pursuer in damages: Therefore assolvie the defender from the conclusions of the action, and decern: Find the pursuer liable to the defender in expenses both in this court and the inferior court; appoint an account thereof to be given in; and remit to the Auditor to tax the same, when lodged, and to report. (Signed) DUNCAN M'NEILL, I.P.D."

We would specially draw the attention of our readers to this case, as it illustrates well the hardships to which medical men are exposed, and the utter impotency of the Medical Act to protect registered practitioners from being assailed, both in reputation and pocket, by such prosecutions as the one we have detailed.

Here is a surgeon, for aught we know, most careful and skilful in his profession, kept in a state of suspense from the 26th December 1859 to the 14th February 1862, because a bone-setter, whom the Act cannot touch, pronounced his diagnosis faulty; not only this, but we find him deeply involved in expenses, to the amount probably of fifty or sixty pounds, which he cannot expect to recover, in order that he may vindicate his unjustly damaged reputation; to crown all, we have a Sheriff, one of the most celebrated historians in Europe, and who must in his researches have met with many instances of exposed quackery, actually accepting as surgical evidence, and that, too, in antagonism to such a man as Dr Lyon of Glasgow, the unsupported statements of London Cranstoun the bone-setter!

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLI., 1861-2. MEETING IV.

Wednesday, 6th February 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

Dr Mitchell (Deputy-Commissioner in Lunacy) read an elaborate paper on "Marriages of Consanguinity, their Influence on Offspring," of which the following is an abstract:—

Dr Mitchell began by a brief account of existing opinions on this subject. He pointed out that whatever the practice may be, such alliances are, and have always been, almost universally condemned both by the general public and the medical profession. And as everyone has considerable opportunities of testing its accuracy by personal observation, he argued that the probability of its being a traditional error becomes very small. He stated that the literature of this subject abounded in simple assertion, which might be correct, but that the basis on which important conclusions are made to rest is often not given at all, and when given, is undefined or clearly too narrow. He pointed out that much of the general and professional opinion on this subject hangs on a peculiar kind of evidence. We are presented with the question, "Do these marriages injure the offspring?" and we search for instances from the history of which the answer is to be given. Now it is certain that all those cases which have been marked by misfortune will first rise up, while many of those which have exhibited no evil effect or no peculiarity will probably be passed over because

forgotten. Facts so collected lead to inferences beyond the truth,—an exaggeration of a calamity whose proper dimensions are sufficiently great. Without intention they are selected cases. Being true in themselves, they show what is possible, but they by no means embody the rule. He then detailed the results of 45 cases so collected by himself. Some of these he discussed individually as illustrative of atavism, of the connexion between heredity and his subject, of the various forms of injury and modes of manifestation, etc. The line of investigation to which these considerations had led was then described. Instead of grouping cases, supplied by his own memory or the memory of others, he took small communities, examined the history of every such alliance in these communities, as well as of every marriage without kinship, and compared these. And in order further to test the result of such inquiries, he ascertained, with as much accuracy and precision as possible, the history of the parentage of all insane or idiotic persons in a particular district of the country. These inquiries were conducted by himself, his official duties giving him the necessary opportunities. In addition to showing the influence of consanguinity of parentage on the production of the actual idiocy of the country, he also showed its power as a cause of actual deaf-mutism. And he examined at some length the argument from in-and-in breeding in the lower animals. By this mode of investigation he hoped to obtain sounder conclusions as to the character and measure of the pernicious influence which blood alliances exercise on the offspring.

Taking the whole number of idiots examined (711), out of every eight one was the fruit of a union of consanguinity. This includes those cases where the relationship of the parents could not be ascertained, as well as illegitimates. When these were excluded, and when those idiots *born in marriage* of parents related by blood were compared with those *born in marriage* of parents not so related, they stood in the proportion of 1 to 5·8,—or more than every sixth idiot born in wedlock was found to be the child of cousins. It further appeared that the influence of kinship of parentage as a cause of idiocy manifested itself still more strongly when those cases only were dealt with in which more than one idiot had occurred in a family.

As regards the deaf-mute the influence was not so marked, but was still very evident. In Great Britain one deaf-mute in 16·7 was found to be the child of cousins. This closely agrees with Mr Wilde's estimate for Ireland, but is not so high as that formed by Dr Peat and Mr Buxton.

These subjects, which were discussed at considerable length, are here stated in the briefest manner possible; but when the paper is published the whole details will be laid before the profession.

Dr Mitchell in examining the argument from in-and-in breeding in the lower animals, discussed the views on this subject expressed by well-known writers and stock-breeders, and concluded with the following remarks:—

“Everything is secondary to the property of producing in the shortest time the largest quantity of flesh with the least consumption of food. The great desideratum is an early arrival at maturity, or premature age—an early maturity, too, of particular parts, of muscle and fat especially.

“After all then, in these cases where in-and-in breeding has been practised with so-called good results, the issue is nothing but the development of a saleable defect, which, from the animal's point of view, must be regarded as wholly unnatural and artificial, and not calculated to promote its wellbeing, enjoyment, or natural usefulness. And in this view all the seeming contradictions to the law disappear. By in-and-in breeding we may establish an artificial type, and fix a peculiarity which is unnatural, if not morbid, and whose only value is its profitable convertibility into gold, but no evidence whatever exists in these apparent anomalies that by such a system of breeding we can improve the natural animal.

“Strictly viewed, Collin's “*Comet*” was nothing more or less than a perfect pathological specimen—a deviation from a natural animal—perfect in a desired direction. Yet, *pro tanto*, the animal was the less useful to himself, *had he been left to himself*, and *had he been deprived of the artificial keeping and management which his artificial condition demanded*.

“When it becomes desirable to perpetuate a peculiar malformation in man, then in-and-in breeding may have *good* results—the results being estimated as good or bad according as they realize the end in view. I know the case of a man who has supernumerary little fingers, and whose two children and seven grandchildren have the same. Were additional little fingers of great value, the true way to obtain a race having this peculiarity, would certainly be to establish blood alliances in this family; and when we obtained the desired excess of fingers in the offspring, we

should then have as good reason to say that kinship of parentage had done good and not harm (since we should have in the way we wanted a more perfect animal)—as the farmer has to say, it has done no harm but good, when he looks on his Leicester sheep, with little heads, and small bones,—their lymphatic temperaments enabling them to feed without disturbance,—fat, ripe, and ready for sale in their very lambhood.

"Till the excellences of man are estimated by weight; till the man be an artificial, and not a natural man; till we want legs at the expense of arms, or arms at the expense of legs, or head at the expense of body, or body at the expense of head; till we want maturity in babyhood, and premature age; till the perfect man be something else than a well-balanced development of all his components, bodily and mental, we must apply the experience of breeders of artificial stock cautiously and with reservation in human physiology."

That part of the communication which related to the examination of particular communities embraced several fishing villages on the N.E. and S.E. coast of Scotland, as well as St Kilda, Bernera, and other islands off the N.W. coast. The account of this investigation was full and minute, and the aspects of the question thus brought under notice were very varied. The nature of some of these will be gathered from the conclusions to which Dr Mitchell has been led, and which are stated below. Many apparent exceptions were pointed out, and attention was directed to those things by which the effects are influenced or modified. The general teaching of the whole, however, decidedly pointed to injury to the offspring as the result of a blood-relationship between the parents. It is not possible to give here even an abstract of this portion of Dr Mitchell's paper. Each place selected for investigation differed widely from the others, and by peculiarities so decidedly affecting the results, that nothing short of a full detail would be satisfactory. The extraordinary influence of trismus on the infant population of St Kilda, for instance, appeared to destroy the lesson which it was expected to teach. One pleasing conclusion to which these investigations led was, that such marriages are not so frequent in Scotland as has been long supposed; and it was stated that the enlightened proprietor of the Lewis does all he can to prevent their occurrence among his tenantry.

Dr Mitchell's conclusions were of two kinds,—those resting on a basis of stated facts, and those arrived at insensibly and irresistibly by himself during the progress of inquiry, and founded on observations which it would be difficult if not impossible to tabulate, or even state with precision. These inferences may be thus briefly given, but each in its enunciation was considerably amplified by the author.

I. That it is a law of nature that the offspring is injured by consanguinity in the parentage.

II. That this injury assumes various forms.

III. That in all classes and conditions of society its manifestations are not alike.

IV. That the evil appears to be in some measure under control.

V. That isolated cases or groups of cases may present themselves where, in addition to consanguinity, all the other circumstances are so unfavourable that a confident prediction of much evil would be justified, yet where no such evil appears.

VI. That, where the children seem to escape, the injury may show itself in the grandchildren; so that the defect may be potential when it is not actual.

VII. That, as regards mental disease, unions between blood relations influence idiocy and imbecility more than they do the other forms of insanity.

VIII. That, with reference to Scotland, it may with safety be estimated that about 9 or 10 per cent. of existing idiocy is referable directly to consanguine marriages. In forming this estimate the proper deductions were liberally made, so as to avoid an over-statement.

Dr Mitchell concluded by an attempt to explain the manner in which these sad effects result from such unions. *Transmissible peculiarities* of all kinds are apt to be thus intensified. If there are diseases in the parents, there are aggravated diseases in the offspring; but though the diseases may not be manifest in the parents, they may be so increased as to constitute evident disease in the children.

Dr Seller would congratulate the Society on having had so able a paper as that of Dr Mitchell brought before it. Dr Mitchell had brought forward some very startling conclusions, but there could be but one opinion as to the evidence being strong in the same proportion. He had no objections to offer to these conclusions; on the contrary, he had himself been led to them, although on much smaller grounds. The difficulty he (Dr Seller) had always experienced was this, that he had had no opportunity of contrasting such cases of marriages of consanguinity as he had known to

be attended with bad effects upon the offspring with similar cases in which no bad effects had followed. One of the most valuable characteristics of Dr Mitchell's paper was, that it brought forward abundant evidence on both sides of the question. No one could now believe that the popular opinion regarding the injudiciousness of consanguine marriages was erroneous. Dr Sellar trusted that Dr Mitchell would reproduce his paper in a form which would be available not only to the profession but to the public, as it was most desirable that correct ideas should be circulated regarding a subject of such vital importance to the wellbeing of the community.

Dr Brown (Commissioner in Lunacy) had arrived at much the same conclusions as Dr Mitchell, although by a very different route, and in opposition to what he could not but regard as great difficulties. During the period of his studies, he had been imbued with what were at that time considered very sound views regarding the evils of consanguine marriages; and these views had been illustrated in much the same way as Dr Mitchell had illustrated his opinions, by reference to what was observed in the breeding of cattle. He (Dr Brown) had, however, soon come to the conclusion, that other causes besides relationship must contribute to the deterioration which resulted from consanguine alliances. In the case of horses, no bad effects appeared to result from the practice of breeding in-and-in. Stud-books would show, that in the case of the best race-horses, which united every quality which were desired in the animal, there was a constant and systematized breeding in-and-in.

The Arab has the finest qualities of any horse, yet breeding in-and-in has been systematically practised since the days of Mohammed. He might allude to another breed of animals—the wild cattle of Tankerville. These were representatives of a well-preserved breed of animals, where, in consequence of their limited number, there were constantly consanguine alliances, but where no deterioration had resulted. Leaving the lower animals, and coming to man, what did we find? The Jews, for instance, rarely contracted alliances with strangers, yet, though scattered abroad for eighteen hundred years, and constantly intermarrying, they still united the highest qualities of humanity, both physical and mental. The same thing had been noticed in the case of certain Mohammedan communities in India, which had separated themselves from the people of the country where they lived. It was strikingly illustrated in the Polynesian chiefs, who never married except with their own caste, and among whom no new blood had for years been introduced, and who yet presented the finest bodily forms. All these facts had inspired him with doubts as to the effects of consanguine marriages, and his difficulties had been even increased during the course of his experience in public hospitals. He (Dr Brown) did not deny that consanguine marriages might and probably did lead to unfortunate results; but it was possible that these results followed, not in virtue of the mere consanguinity, but in consequence of the transmission of the temperament, or of diseased qualities. According to the doctrine of hereditary diseases, it was not the absolute disease but the tendency to it which was transmitted. A man who had never been mad might be *potentially* insane, and he might transmit to his offspring a tendency to insanity. Now, in the case of consanguine marriages in the case of families in which there was a special tendency to any form of disease, it must be obvious that if both parents had the same predisposition, the risk to the offspring would be greatly increased. In marriages between strangers, morbid tendencies on the two sides might mutually modify or counteract each other, but in the alliances of relatives the morbid predisposition would necessarily be aggravated. In this way such diseases as syphilis, struma, gout, and phthisis might be transmitted, of all of which it was well known that the various forms of insanity were often the expression. Dr Brown was therefore not satisfied that the mere fact of consanguinity was the cause of the evils resulting from the marriages in question, but he was inclined to believe that the danger arose from the family tendencies to disease being transmitted to the offspring with unimpaired, and indeed increased activity. Dr Brown stated that a startling fact was recorded by Robertson regarding the native coloured races of North America, namely, that insanity was scarcely known among them; and it appeared that it had been their invariable custom to destroy all the weak, deformed, rachitic, and diseased children. Consequently the element was destroyed which would have mingled with consanguinity and given rise to insanity.

Dr Andrew Wood referred to the American statistics regarding this question. It was doubtful how far they were reliable; still, as they could not be altogether fallacious, they established a *prima facie* case as to the dangers of consanguine marriages. Dr Wood was quite satisfied, both from the statements in Dr Mitchell's paper and from what he had himself seen, that the popular opinion regarding the bad effects of

marriages of relatives was correct. He had observed recently, in reading Du Chaillu's travels, that among African tribes, who were particular in segregating themselves, great care was taken that marriages should not take place among blood-relations. In the same way, some one having alluded to the population of the fishing village of Newhaven, as an example of breeding in-and-in, inquiry had been made, and it was found, that though the inhabitants did keep themselves much segregated, they were very careful regarding their intermarriages, and looked upon the union of relatives as an infringement of the laws of morality. As to the Jews, there was no doubt they kept themselves apart from other nations, and that they still retained their physical and mental characteristics little changed, and undeteriorated; but they, too, were very careful to avoid consanguine marriages. With regard to horses the general impression was, that though there were exceptions, breeding in-and-in as a general rule led infallibly to deterioration. Even in the case of the race-horse, it might be doubted whether they possessed the good qualities of the horse in the highest degree; it was possible that what they gained in speed, they lost in bottom. Dr Wood knew also from his own experience that trainers considered it out of the question to go on for a length of time breeding in-and-in. Dr Brown had made a very suggestive remark as to the danger of consanguine marriages not consisting so much in the mere relationship as in the circumstances of relatives by blood having the same morbid tendencies, and transmitting them to their offspring. Dr Wood could conceive nothing so calculated to aggravate the transmission of hereditary diseases as consanguine marriages. He had seen cases where scrofula had been transmitted in this way, and where the results had been most deplorable.

Dr Matthews Duncan, from the nature of his studies and from his experience in the maternity charities of this city, had had the subject of Dr Mitchell's paper frequently forced upon his attention. He had devoted some pains to the inquiry, but he would not at present bring forward any statistics in support of his views. He had long ago been led to consider that the great difficulty and risk of error in this investigation arose from the almost absolute impossibility of eliminating the effects of hereditary transmission from those of consanguinity. The statements of Dr Brown showed almost conclusively that consanguine marriages, whatever they may lead to, do not lead to the establishment of malformations. Dr Duncan was of opinion, that the effect of such marriages was similar to that produced by the age of the parents on the number and condition of the offspring. He was satisfied that age affected both fecundity of marriages and also the perfection of the children, and the latter not so much in producing any well characterized conditions as in influencing the general state. In the same way, breeding in-and-in appeared to influence to the establishment of certain temperaments, to favour the production of obesity, and to lead to sterility. Consanguine marriages, in the same way, did not lead so much to the production of malformations or to the establishment of idiocy as to the induction of general conditions, such as sterility. The solution of such a question as the present, by means of even the most carefully collected statistics, was extremely difficult. Dr Mitchell had come to the conclusion, that consanguinity of the parents had an influence in producing malformations and imperfections of the offspring, because consanguine marriages were followed by a greater number of children so affected than was found when the parents were not related. But supposing it shown, even by the largest statistics, that consanguine marriages were followed by a large number of malformations, it did not follow that the consanguinity was the cause of them. Out of the unlimited number of causes which might have been in operation, we could not tell how far, in the special cases, consanguinity might have operated. It would be necessary, accordingly, to have statistics to eliminate consanguinity from other possible causes. To do so it would be necessary to go back to the parent stocks, and to inquire whether any hereditary diseases had been introduced with the consanguine marriages; it was needless to say how difficult, if not impossible, such an inquiry would be. Another subject threw some light on the present inquiry, namely, the effects of cohabitation between different nations. Some curious facts had been observed by Caldwell. In the breeding in-and-in of mulattoes, complete sterility was arrived at in the fourth generation, then farther production ceased. Not that it was asserted that a mulatto of the fourth generation was absolutely sterile, but that he was not fertile with another mulatto of the same kind. Another important subject was the elimination of the peculiarities of a race by breeding. It appeared that the worst peculiarities of a race might be made to disappear by the mingling of bloods. Thus it was stated, that two breedings between mulattoes and white persons caused the almost complete disappearance of all the

peculiarities of the negro. A good deal of importance had been attached to what was noticed in the breeding of stock. But here you had a beautiful example of the effects of breeding in-and-in while hereditary influence was eliminated. The imperfect animal was not allowed to breed, and though breeding in-and-in took place, a high kind of animal was produced. By this means breeders could exaggerate any peculiarities. Dr Mitchell had spoken of short-horned cattle and Leicester sheep as deteriorated animals, but Dr Duncan could not look upon them in that light. The breeder had desired to produce animals, the tendency of which should be to accumulate fat and muscle at an early period, and it must be allowed that he had been successful in his attempt.

Dr Alexander Smith alluded to the Tankerville cattle. It appeared that originally they had been pure white, with red ears. Necessarily breeding in-and-in had gone on for a long time, and it appeared that now animals presenting different colours were frequently produced. Indeed, orders had been given to the keepers to shoot all the animals which deviated from the original colour, and, in consequence, their numbers had been much diminished. Dr Smith could not but look upon this deviation from the primary type as an indication of deterioration of the animals.

Dr W. T. Gairdner concurred generally in the views of Dr Brown, but there was one aspect of the question of some importance which had not been pointedly brought out either in the excellent paper of Dr Mitchell, or in the remarks of the speakers. While breeding in-and-in was, under certain circumstances, to be regarded as a cause of detriment to the progeny, it should be kept in view that, in the human race at least, breeding in-and-in rarely took place to any great extent, except under collateral circumstances, which have a prejudicial effect upon the offspring. Communities among which consanguine marriages were common were generally not in the best conditions for the production of a fine race. They were usually few in number, were out of the way of the general stream, were frequently lazy and unenergetic, and were, in fact, precisely in the circumstances in which peculiarities, especially morbid peculiarities, were likely to be called forth. Conceive the result of introducing struma or syphilis into such a community, and it was easy to see what the result must be. Intermarriages amongst particular castes had also been alluded to. Here it was manifest that any little peculiarities of mind and body must be exaggerated to a peculiar degree. A similar cause might also be in operation in the case of families where consanguine marriages were followed by bad results. There might have been a certain peculiarity in the members of the families which prevented them from mixing with others, hence they intermarried among themselves, and, owing to this exclusiveness, the original peculiarity was necessarily exaggerated. All these things Dr Gairdner regarded as illustrations of a great general law—a wider law than that alluded to in the paper. It had evidently been the object of the Creator to encourage the fusion of blood both among races and families, and the highest development of humanity was met with where this had taken place. The English were examples of the highest development resulting from the mingling of many races. Breeding in-and-in, when systematically practised so as to give effect to individual peculiarities, was a violation of this larger law, and as such apt to lead to degeneration of race.

Dr Coldstream thought the Society should not fail to notice that, among the many benefits derived from the General Board of Lunacy for Scotland, was that of having furnished a large part of the materials of Dr Mitchell's valuable paper.

Dr Peel Ritchie observed, that it was generally believed that insanity was often due to intermarriages of relatives. But, when the subject was more closely examined, it was found that though when cousins marry their offspring is sometimes insane, if other members of the same families marry strangers, a similar fate may befall their children. Hence it would be incorrect to attribute insanity in a special instance to this marriage of cousins, as it might appear when other branches of the family married persons in no way related to them. He might also state, that in the pig the practice of breeding in-and-in could not be carried very far, as the offspring soon ceased to be prolific.

Dr Mitchell had but a very few remarks to make. He had no wish to exaggerate the evils resulting from consanguine marriages, but he thought that the facts he had collected proved decisively that some evil did result from them; it seemed, for example, established beyond dispute, that there was a greater chance of the offspring of such marriages being idiots than in the case of children whose parents were not related. While cordially agreeing with many of the remarks of Dr Gairdner, he (Dr Mitchell) would observe that marriages of consanguinity often occurred where

none of the circumstances alluded to by Dr Gairdner existed. Dr Mitchell could not regard the race-horse as a perfect, but viewed it rather as a deteriorated animal. It possessed, indeed, the desirable property of swiftness in a high degree; but still it would, so to speak, be less useful to itself than an ordinary animal. The mortality among race-horses was great, and they required much care; so that, on the whole, he regarded it as a deteriorated animal. He did not think that the results of breeding in-and-in animals, though full of apparent exceptions, could weaken the general conclusions regarding the effects of consanguinity. Dr Mitchell had not alluded to the Jews, because the facts regarding them were very indefinite. Even the frequency with which marriages of consanguinity occurred amongst them had not been determined. In some countries these marriages appeared to be permitted, in others they were forbidden. On the whole the results were so doubtful that no use could be made in one way or the other of the very peculiar position of the Jews.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING V.

February 21, 1861.—Dr KEILLER, *President*, in the Chair.

I. INDUCTION OF PREMATURE LABOUR IN CASES OF CONSTITUTIONAL AFFECTIONS.

Dr Keiller remarked, that cases occasionally occurred where pregnancy was associated with various constitutional diseases in such a way as to render it incumbent on the practitioner to induce premature labour, with the view either of saving the patient's life or of mitigating her sufferings. He wished to bring before the Society the history of some cases of this kind, which had recently come under his own observation, and in which he had had some difficulty in deciding as to the propriety of the operation.

1. *Double Bronchitis.*—He had lately had a case of acute double bronchitis under his care in the hospital, where the difficulty of breathing was so great that the patient sometimes appeared in danger of death from suffocation; so that, on more than one occasion, the officers had been summoned from the surgical department under the idea that it might be necessary to have recourse to tracheotomy. As the dyspnoea was greatly increased in consequence of the tumid condition of the abdomen, premature labour was induced, greatly to the advantage of the patient, who felt speedy relief, and who soon afterwards recovered completely. The child, however, had not been quite viable.

2. *Phthisis.*—The history of the next patient, whom he had had under his care in the Infirmary, he would give as it had been drawn up by his clinical assistant:—

"M. D., æt. 36, was admitted into Ward XIII. on the 24th September 1860. She was married, and had had eight children. On admission, she was suffering from phthisis; and on examination the left lung was found to be very much diseased. At this time she said she had not menstruated for four months. The uterine bruit could be detected, but not the foetal heart,—a few weeks after admission, however, it could be distinctly heard. During the next three months the disease of lungs advanced rapidly; the enlarging uterus, gradually encroaching on the chest, caused severe attacks of dyspnoea, and she often started from her sleep with a sensation of suffocation, which was generally relieved when she assumed the sitting posture.

"8th January.—She says she is now at the eighth month of utero-gestation. Dr Keiller thought there was a chance of saving the life of the child by inducing premature labour, and thereby at the same time freeing her from the frequent attacks of dyspnoea.

"Labour in this case was very easily induced. At 9 P.M. an examination was made, and as the os and cervix uteri were soft and dilatable, one finger was passed through the os with comparative ease, and the membranes separated to a small extent around it. At 11.30 P.M. she had had a few pains. Examined

again and found the os dilated so much that two fingers could now be passed into it, and the membranes separated still further.

"At 6 o'clock next morning the os was fully dilated, and a large bag of membranes protruding. As the right shoulder was the presenting part, turning was practised and the child brought away alive. The placenta was expelled soon after the child, and the uterus contracted pretty well. Little hæmorrhage occurred after the expulsion of the placenta. The child was born alive, but was small and weakly.

"The patient's breathing was very much relieved during the next fortnight; but, about three and a half weeks after delivery, she died completely exhausted by the disease of the lung."

3. *Cardiac Disease.*—He had at present under his care another patient, who was pregnant for the first time, and was of a very delicate constitution. She suffered from enlargement of the heart; and although there were no distinct physical signs of any affection of the lungs, yet her case was a very anxious one, as she was a member of a very phthisical family, and had herself had some hæmoptysis a short time before. He (Dr Keiller) did not think it would be necessary in this case to induce premature labour, but thought it extremely probable that it might be found necessary to apply instruments early to hasten labour when it supervened.

4. *Cerebral Disease.*—Another patient, about seven months pregnant, whose case he thought worthy of mention, had been for some time in the Infirmary under the care of his colleague, Dr W. T. Gairdner, who regarded the case as one of general paralysis. She had become very much reduced in strength, and had been sent into his (Dr Keiller's) ward with the view of having premature labour induced. She is the mother of seven children; suffered during her last two confinements from puerperal mania of short duration, and about six months ago was observed to suffer from loss of memory and general debility. The patient was unable to give much account of herself; and the facts just stated had been obtained from her husband, who had reminded Dr Keiller that he had seen the patient, about eight years ago, on the occasion of one of her confinements, when she was greatly exhausted by a flooding, from which, however, she had slowly recovered. He (Dr Keiller) believed the patient to be the subject of chronic cerebral disease, and although she had been several weeks under his care, he had not deemed it necessary to have recourse to the induction of premature labour, because there seemed every probability that she would be able to carry the child to the full time, and because, as yet, the child was hardly viable. There was this peculiarity in connexion with the case, that the abdominal and uterine walls were so thin and lax that the fœtus could easily be moved about in the interior of the uterus by external palpation. The following were the notes of the case as recorded by his assistant:—

"S. C., æt. 38, married. Admitted into Dr Gairdner's ward, December 13, 1860, suffering from amentia and debility. She is the mother of seven children. During her last two confinements she suffered from symptoms of puerperal mania, but in a few weeks after each confinement she recovered completely. About six months ago she was observed to suffer from loss of memory and debility, and she gradually fell into the state she was in on admission to Ward xv.

"After a residence in Ward xv. of two months, she was rapidly losing strength, and she was sent to Ward xiii., under Dr Keiller's charge, in order that premature labour should be induced to save the child.

"As Dr Keiller, however, did not think the time of utero-gestation far enough advanced, and as she improved in general health, the induction of premature labour was deferred."

5. *Fatal Vomiting.*—Finally, he wished to mention, in connexion with these cases, the case of a woman who had had several children previously, and had never suffered from any abnormal sickness or other morbid symptom during her pregnancies, but who had died, about the third or fourth month of her next pregnancy, of excessive vomiting. In this case he (Dr Keiller) regretted that

abortion had not been induced, as, on post-mortem examination, there was no evidence of any other cause for the vomiting except the pregnancy; and if the uterus had been made to discharge its contents, the secondary and fatal symptom might probably have been relieved.

II. SPECIMENS OF ABORTED OVA.

Dr Alex. R. Simpson showed, first, a series of preparations of aborted ova, successively thrown off by a patient at about the sixth week after conception, in consequence of commencing hydatigenous degeneration of the chorion; second, a preparation of a complete decidua vera, with an ovum embedded in its deep surface, at a short distance from one of the tubal angles, and not visible on the internal surface of the decidual cavity; third, an entire ovum, which had been expelled at about the fifth month, apparently as a result of partial separation of the placenta.

MEETING VI.

February 27, 1861.—*Dr Keiller*, *President*, in the Chair.

I. EMPHYSEMA DURING LABOUR.

Dr Bruce read the following notes:—Mrs M—, a primipara, was attended by me on the 6th inst., during labour. She had strong pains for about five hours, and the labour was rather a severe one. Towards the close she complained of becoming unable to see, and that she was like to be suffocated. On requesting her to turn her face towards me I observed that it was extremely swelled, and that one eye was nearly blocked up,—her face being then very red. The appearance presented was very much that of erysipelas, and the disfigurement quite as great. On further examination the neck and chest were found to be similarly puffed up; and on pressure, a very distinct crackling was felt all over. She was very much alarmed about her condition, which I informed her she need not be, as it would go away in a few days. Next day (7th), the face was less swelled, but otherwise she was much the same, and still complained of the choking sensation. 8th, Much the same. 9th, Face becoming natural, but still some swelling about chest, etc. 13th, The emphysematous condition has almost entirely disappeared—just a week after its occurrence.

The chief untoward symptom that followed was a mammary abscess, apparently caused by the inability of the child to draw out the nipple.

Dr Keiller remarked, that he had seen several cases of the same nature as that described by *Dr Bruce*, and in most of them the air had disappeared from the cellular tissue in about eight days. But in one case that he (*Dr Keiller*) had seen in Dundee, a number of years ago, where the emphysema extended over the whole body, the crackling could be felt at some parts for several weeks afterwards.

II. SEPARATION OF THE FŒTAL HEAD DURING DELIVERY.

Dr Pattison said, that on January 4th he had been sent for to see a patient who had been exposed to wet and cold when she was about five and a half months pregnant, and from whom a large quantity of liquor amnii had suddenly escaped. He had known the patient for some years, and had attended her on some previous occasions, when premature labour had been induced in consequence of her having an extremely narrow pelvic brim. When he saw her on the day named labour had not yet set in, although she was troubled with occasional slight pains, which were quieted by means of opium. The fœtus was already dead. When he went to visit her next afternoon he found that the pains had returned with greater severity, and that a foot and a hand were projecting through the os uteri, which was pretty fully dilated. He determined to deliver by podalic version, and this he effected by bringing down first one foot and then the other, but not without much difficulty, caused by the extreme degree of contraction of the brim. He wrapped a towel round the body of the fœtus,

as it was very slippery, to give him more power in extracting the head; and as he was attempting to put a finger into the child's mouth, in order to flex the head more completely, he felt that something had given way, and on examining the neck found that the skin of it had been torn. Thinking that there might still be a sufficient connexion between the head and the trunk to admit of the extraction of the former, he pulled slightly at the latter, which came away in his hands. He expected to find much difficulty in removing the head; but by introducing one hand into the vagina, and seizing the portion of the neck still in connexion with the head, and applying the other hand at the same time over the uterus externally, he was enabled by the combined effort to drag and squeeze the head through the narrow brim, and so to complete the delivery of the child. The placenta was in a morbid and softened condition, and came away in morsels.

The fœtus was exhibited by Dr Pattison, and the separation was seen to have taken place at the very root of the neck, between the last cervical and first dorsal vertebrae.

Dr Figg observed, that although he had never met with an accident of the nature described by Dr Pattison, yet he had heard of several cases where it had happened; and he believed that when the operation of turning was performed in a full-timed fœtus, separation of the head might be accidentally effected thus:—Supposing the child to have presented in one of the occipito-anterior positions of the head, when simple turning had been effected, and rotation of the body on its longitudinal axis had been made, the head might impact in the brim with the occiput turned backwards; and in then attempting to rotate the head into the first or second position of Nægele, by acting on the body, the neck might have been twisted and torn through. He had once met with a case of separation of the head where the child, which was still-born and premature, was presenting naturally. The head was low down in the pelvis, and as uterine action was deficient, he (*Dr Figg*) thought to hasten delivery by dragging the head down with his hand. During the traction, however, the head separated and came away; and the inertia of the uterus having continued, the acephalous fœtus was not born for several hours afterwards.

Dr Keiller observed, that he had seen two cases where the head of the child had been separated and left in the uterine cavity. 1. In one case the child had been turned in consequence of a contraction of the brim, and on dragging at the body, as in Dr Pattison's case, the head had separated and remained in the uterus; and he (*Dr Keiller*) had been called in to assist in the delivery of the head, which proved to be an operation of great difficulty. Forceps had rolled off several times, and hooks always slipped, and the head was only finally extracted in a very mutilated condition by means of two opposed crotchets, used like forceps. 2. In the second instance the forceps were being applied under his (*Dr Keiller's*) directions by the house-surgeon to the Maternity, when a gush of blood occurred from the uterus, and the foetal head receded, for rupture of the uterus had taken place. He followed the child, by passing the hand through the opening into the peritoneal cavity, and tried to extract it by the feet, and succeeded so far, until the neck was caught in the fissure. On trying to pull the head through, the neck gave way all but the skin behind, and the head was only extracted, by means of hooks, with great difficulty. The woman died, and on making an examination of the body there was found, in addition to the rupture in the uterus, a tear in the peritoneum lining the inner surface of the anterior abdominal wall immediately above the bladder.

Dr Alexander R. Simpson believed, that in such a case the child might have been saved, and the mother would have been afforded a better chance of recovery by means of gastrotomy.

Dr Pattison remarked, that in a case where separation of the head had occurred in the practice of the late Dr Campbell, the patient had died with the foetal head still undelivered.

Dr Peter Young stated, that he had assisted Professor Simpson some months before in a case of turning for contracted brim, where the conjugate diameter

was so narrow that the operation in all its stages had been very difficult. The neck gave way as the head passed through the brim; so that, when the child was fully born the vertebræ were found to be quite separated, although the skin had remained entire.

III. ACCIDENTS IN TURNING IN NORMAL LABOUR.

Dr Figg wished to make some observations regarding the accidents that sometimes occurred in turning in cases of natural labour, as he had no desire to conceal the drawbacks attendant on his practice. One or other of the extremities sometimes became fractured during the operation; but no permanent or prolonged inconvenience resulted. Thus, in one case lately, the right femur and left humerus of the same child having been broken, he applied a plaster to each, and in two or three weeks both limbs were quite strong. A more distressing accident sometimes occurred, where no fracture of any bone could be detected, but where the forearm remained powerless, usually hanging down by the side with the palm of the hand turned backwards. The arm sometimes remained in this condition for several months; but as no kind of treatment had ever seemed to be of much service, he had usually contented himself with quieting the mother's fear, and had always found that the arm ultimately became quite well. These accidents happened during the attempts made to bring down the arms before the head; and to avoid them, in all his more recent cases, he had contented himself with simply pulling the body out by the feet without paying any special attention to the arms, which were usually thrown upwards, and came down easily along with the head. Thus, nine days before, he had been sent for to see a patient whom he had delivered on a previous occasion, and having found the os uteri sufficiently dilated on his arrival to admit the hand, he at once introduced it, seized the feet, inverted, and extracted the child without letting go his hold. In that case, although no chloroform had been administered, the patient would never have known that she had been subjected to any kind of operation, had she not made the shortness of the time spent in her delivery a ground for refusing to pay the usual honorarium. He (*Dr Figg*) had observed that many of his patients were subject to a slight degree of intestinal catarrh a few days after delivery—most frequently in winter, when about one-half of the whole number became affected. On the whole, he had found his practice to be attended with less mortality than occurred in previous practice; and he could only recall to memory one fatal case since he had recourse to turning in all deliveries, and the death was then due to rheumatic disease of the heart. He believed that post-partum hæmorrhage occurred in his practice in a greater proportion of cases than when patients were delivered according to the ordinary method; but he had never seen it occur to a fatal degree. He usually administered ergot immediately after the child was born, and frequently introduced an opiate suppository into the rectum. Where there was any strong tendency to flooding, he was in the habit of introducing the hand into the interior of the uterus so as to excite it to more forcible contractions. He had never met with any tendency to hæmorrhage in primiparous cases.

Dr Carmichael suggested, that the palsy of the arm of which *Dr Figg* had spoken might be due to a more or less complete dislocation of the head of the radius.

IV. CANCER OF THE INTERIOR OF THE UTERUS.

Dr Alexander R. Simpson showed a preparation of malignant disease in the interior of the uterus.

V. ENTIRE OVUM EXPELLED AT SECOND MONTH.

Dr Keiller showed a preparation of an aborted ovum which he had removed in the morning. He had seen the patient, who had been flooding more or less for ten days, the night before, and introduced a sponge-tent. During the night she lost a good deal of blood, and in the morning he (*Dr Keiller*) got two fingers introduced into the os uteri, and removed an entire ovum which seemed to have been developing for about two months.

MEETING VII.

March, 20, 1861.—Dr PATTISON in the Chair.

I. FATAL CASE OF LABOUR.

Dr Pattison read the following notes:—Mrs —, æt. 30; *Feb.* 6.—About three weeks before delivery she was seized with a severe pain in the chest, like pleuritis, which was subdued by the use of leeches and Dover's powder. The feet now began to swell, and there was a little fullness of the hands. No albumen could be detected in the urine on repeated trials. 8th, For three nights previous to this, and during the day, she had regular pains, according to her own account; but when I was present, I could not detect any uterine action. For the last four months she has complained of a severe pain on the right inferior lateral region, not constant. Tincture of actæa, sinapisms, turpentine, anodynes, had but little effect. Ammoniated tincture of valerian gave some relief; but prussic acid was the most valuable agent in mitigating the pain. 8th, About 6 A.M. the waters broke when sitting up, which was her most easy posture, on account of the epigastric pain. For the three previous nights she had not slept, notwithstanding the use of morphia, henbane, and black drop. On the evening of the 8th I gave her 30 drops of the sedative liquor of opium, and she slept for six hours; the os uteri was not open, and felt to me not fully developed. 9th, I could on this day introduce with some difficulty the point of my fore-finger into the os, but the inner was not so dilated, and felt a bag of membranes. First position and first child. I again ordered 30 drops of the sedative liquor of opium. 10th, I was sent for this morning about 10. The pains were more regular; the os about the size of a sixpence;—she was always examined under chloroform, she had such a dread of any additional pain. The pulse was 80; she appeared a little excited. I saw her again in three hours, when the nurse and her friends said that the pains had gone to her head, and that she was surely mad, or she would not be going on the way she was doing. At a quarter past two she was very much excited. Pulse 92. Her eyes wild and staring, singing snatches of a song, etc. She appeared to me maniacal. I called on Dr Simpson, who kindly accompanied me. Dr Simpson remarked, that he never had seen a case till within twenty-four hours, when he saw a lady in the same state, in the first stage of labour, as this was. Dr Simpson advised the use of chloroform when the pains came on, and to dilate with the finger. I used the finger, Keiller's dilator, warm water, etc. Dr Simpson saw her again about 9 P.M., and advised me to continue as I was doing, remarking, that she had a peculiar colour in the face which he did not like. I continued all night using my finger during the pains, and about 5 A.M. the os began to yield a little more, and the head came more down, the membranes having ruptured about 7 A.M. 11th, About 8 A.M. the os uteri was fully the size of a breakfast cup. I left at half-past eight to get an hour's sleep, and during my absence Dr Simpson called, saying he would return about half-past ten, which he kindly did, notwithstanding he had been up all night. As the parts were getting hot, Dr Simpson determined to deliver her with the long forceps, which required immense traction to make it advance. I pulled with a great deal of force, when the head began to advance. Dr Simpson completed the case. The child was dead and had been so since the 8th, as on that day she was complaining of a sense of chilliness all over, and a weight in the abdomen; she thought the bowels were not quite so full, adding, at the same time, but I feel the baby moving. The skin was peeling off on the neck and abdomen, and a raw surface on the neck of the baby. The placenta was easily detached and expelled. I pressed down the uterus, which, from obesity of the patient, was with difficulty discovered. About twenty minutes after the removal of the placenta, Mrs — now being completely out of the effects of the chloroform, of which upwards of ℥xi. had been used, began to grow very faint, the pulse sank. Internal hæmorrhage had taken place. Dr Simpson passed his hand and removed, I should say, at the very most, about 8 or 10 ounces of blood, I grasping the uterus outside, which contracted. Brandy

and wine were poured down in large quantities, but still the pulse was scarcely perceptible. I gave an opiate. Though sensible when roused, she was wandering, insisting on getting up; she got more restless, talking and tossing about, the pulse never rising. At 5 P.M. the abdomen was quite tympanitic, and she ultimately sank at 6.20, seven and a half hours after delivery.

Remarks.—Mrs — was very stout, nervous, and exceedingly anxious about herself, never expecting to recover. She could not be divested of this idea. About 4 A.M. on the 11th she asked me if I expected to see her alive after she was better. I said yes, of course I do; she repeated, slowly, "Not in this world, Doctor." She had not been out since her return from the country about the middle of September, complaining of severe pains in the hip-joints, and was always worse when she went out. The eyes continued wild, bright, and staring from the previous day all the time. The sound of her voice was quite changed, she using the pure English accent, which I never heard her use since she was married. The face was pallid, of a yellow, unhealthy hue. Dr S. thought the blood was poisoned. The os uteri was dilated by my finger. Nature had little or no effect, and it required considerable efforts to effect this. The swelling of the feet and hands was a bad symptom, but diminished under acetate of potash with broom-tops, and rubbing with oil. No albumen could be detected, as I have mentioned. She sunk, in my opinion, from the long-continued (useless) labour pains, sleepless nights, aided by the slight hæmorrhage.

Queries.—I. Should the head of the child be opened in such a case?

II. When could such an operation be performed, I mean regard being had to the size of the os uteri?

III. What was the cause of the pallid yellow hue of the face?

IV. Had opium anything to do with it?

Professor Simpson remarked, that he had been greatly impressed by the fact, that in Dr Pattison's case the patient had commenced at the onset of labour to sing an absurd song; and this circumstance, together with the peculiar dusky hue of the skin, which gave him the idea that the patient must be labouring under some kind of toxæmia, led him from the first to form a very unfavourable prognosis regarding her. Perhaps the small quantity of blood that was lost might have some effect in leading to a fatal issue; as in some patients, and in some states of the system, the loss of even a little blood had a most depressing effect. He had attended a delicate lady in her seventh confinement two days before, who lost an unusually small amount of blood when the placenta was expelled, but who fell into a series of fainting fits, when less than a tea-cupful of partly clotted blood was expelled about an hour afterwards. In Dr Pattison's case the uterine action had from the first been feeble, and he (Dr Simpson) remembered well that Dr Pattison had remarked that it would probably have to be terminated with the long forceps.

Dr Bruce, in illustration of the circumstance that patients dying in connexion with parturition sometimes have a strong presentiment of their death, stated, that he had once attended a patient in her confinement who for some time before declared most persistently that she would be sure to die. She was apparently in good health, though weakly, and he tried to laugh her out of her groundless fears; and after the labour was terminated, he remarked to her that the baby had been born quite safely, and that she had not died; to which she smilingly assented. But in about an hour afterwards she suddenly sank, apparently from shock, notwithstanding the immediate exhibition of powerful stimuli. No hæmorrhage had taken place.

II. ACCIDENTAL HÆMORRHAGE.

Dr James A. Siley read the following notes:—Mrs S., pregnant of her ninth child, and near her full period. Was quite well up till Saturday, March 6, 1861, when, at 1 o'clock, P.M., she was baking, and was then suddenly seized with hæmorrhage, and lost a quart of blood. I saw her at 2, pulseless, yawning, and blind, and gave brandy. The hæmorrhage had stopped. On

examination, the os uteri was ulcerated, indurated, and irregular; and dilated only so as to admit the finger. The membranes were entire. She gradually improved, and pains came on about 9 P.M. The membranes ruptured spontaneously at 2 A.M. on the 7th. The os was then the size of a crown-piece. Ergot was administered every half-hour till the pains became strong. About 7 o'clock the os was nearly completely dilated, and the right shoulder felt presenting; but the brim being round and small, the body of the fetus lay very high up. The body of the child was at the same time doubled backwards, so that the buttocks and the shoulders were approximated: the head was also bent backwards. A foot was seized, and the child delivered by turning. Several clots came away immediately after a very large placenta. On Tuesday, after some slight exertion, she had slight hæmorrhage, with relaxed uterus, and became very weak, with high pulse, and died at 2 A.M. (Wednesday). The rapid peeling off of the skin of the child was the only other point worthy of notice; for although the child had been dead only about eighteen hours, yet the cuticle could be removed by the slightest pressure: the child, in fact, presented a putrid appearance.

Professor Simpson, in the course of the discussion that ensued, remarked that in cases of unavoidable hæmorrhage the escape of blood might sometimes be at once and effectually checked by the detachment of a part only instead of the whole of the remaining adherent portion of the placenta. He had tried this plan some years before, in a case which he saw along with Dr Burns, with the most satisfactory result. Drs Barnes and Cohen had supposed that the arrest of the hæmorrhage, by means of a partial detachment of the placenta in cases of placenta prævia, was due to its separation from the surface of the cervical segment; but he (Dr Simpson) believed that the matter was capable of a more simple explanation. The blood in such cases chiefly escaped (as in an old published essay on the subject he had endeavoured to show) from the open orifices of the utero-placental vessels along the line where the uterus and placenta were still in apposition, and where the vessels were in consequence kept or put on the stretch; and to check the hæmorrhage, all sometimes that was needed was to relieve this tension by separating the placenta along the bleeding strip, whether this might be seated on the inner surface of the cervix or of the body of the uterus.

MEETING VIII.

April 10, 1861.—Dr KEILLER, *President*, in the Chair.

I. CYSTIC TUMOURS OF THE OVARY CONTAINING HAIRS.

Dr Gillespie showed a preparation of a cystic tumour of the ovary containing a ball of hair, and gave the following history of the mode of death of the patient from whom it had been removed:—

I was met on the street about 8 o'clock in the morning of the 13th August last, and asked to visit Mrs C—, who had been ill with vomiting and purging all night and part of the previous day. I refused to call at the time, but said I would do so after I had breakfasted and dressed. A second message in less than half an hour came and I went to visit her.

She was considerably emaciated. Her face was very pale, the eyes hollow and glistening, and the voice husky and weak. The skin of the extremities cold and clammy.

There was no complaint of pain at this time in the belly, and on pressing it no particular tenderness nor any peculiarity experienced by the hand. The pulse was above 130 and weak; the breathing was slow and irregular.

In answer to a few questions, I learned that she had been ailing for a few days with slight diarrhoea, occasional vomiting, and pains in the belly; but that yesterday, about mid-day, these symptoms were greatly aggravated, more especially the vomiting. The vomited matters had not been kept, nor the dejections, although both had been retained until a short time before my visit.

She immediately received chloric ether and morphia, and small doses of

brandy were ordered to be given frequently; also bottles of hot water were to be placed around the body in bed. I left, telling the friends that I would call early again; but before I had paid my second visit, I found that a message had been sent to the effect that I need not come as Mrs C— was dead.

Taking into consideration the short time before death at which I saw her, the dubious nature of the symptoms then observable, along with the history of the previous few days, I felt quite puzzled as to the cause of death; but coupling these with the singular negligence of the friends in not asking medical aid earlier, the premature and unnecessary removal of the vomited matters and dejections when they had already sent for me, I was impressed with the thought that something more than culpable negligence was involved in the case,—acting upon this impression, I resolved to have a post-mortem examination, and called on the friends and made the request, but was at first pointedly refused. After explaining to them, that in consequence of their own delay in asking advice, I could not grant a certificate of the cause of death, and that in all probability future trouble would arise from their present refusal, I obtained my desire.

Post-mortem.—The usual incision having been made through the parietes, the peritoneal cavity was found to contain a considerable quantity of pus. A cross incision was now made, and the pus carefully removed by the sponge. The peritoneum was universally inflamed, but recently effused lymph was only observed in patches here and there. The right side of the pelvis and iliac fossa was filled by a sac containing fluid, which could not yet be seen, as the omentum was adherent to its upper surface. The omentum being turned upwards, an ovarian sac was brought to view, with a small ulcerated opening on its inner aspect, just below where the omentum had been attached. The opening was enlarged, a large amount of greenish pus escaping. On introducing the hand into the sac, a bundle of hair was found floating, free of attachment. The sac was firmly attached to the omentum, the cæcum, and more slightly to the bladder.

The inner lining of the sac had a thin layer of recently effused blood covering it, which being removed, the enlarged and numerous blood-vessels showed the sac itself to have been intensely inflamed. The object of bringing this case before the Society is that of drawing their attention to the subject of how closely peritonitis induced by the rupture of a chronic abscess simulates many cases of irritant poisoning.

Dr Alexander R. Simpson showed a preparation of the uterus and ovaries of a woman who had succumbed to the same kind of disease as Dr Gillespie's patient, but under different circumstances. In this case the patient, an unmarried woman of upwards of forty years of age, had been aware for several years of the existence of a growth developed chiefly in the left side, but stretching far beyond the middle line to the right. As she had become weak and unfit for her work, and was extremely anxious to be relieved of the weight of fluid, Professor Simpson had tapped her in the ordinary situation, in the belief that the cyst was of the most simple kind, and in the expectation of finding a simple serous fluid, as there had been no history of any inflammatory symptoms whatever. Instead of such a clear liquid, however, there had escaped a greenish-yellow, puriform fluid, which looked, as it escaped from the canula, exactly like the contents of a large abscess. A large basinful of the fluid had been drawn off, when with the last drops of it there had escaped through the tube a single red hair, and it had at the same time been noticed that the portion of fluid that had first come away, and that had now been cooled, had begun to cake or consolidate; and gradually the whole of the cystic contents become of the consistence of firm butter, having been of a stearoid or fatty, and in nowise of a purulent character. The cavity had again become filled up, and two months subsequently to the first operation the patient had a second time been tapped. The fluid then drawn off still contained a large proportion of stearoid matter, although now mixed up with much serous fluid. On the occasion of this second tapping, Professor Simpson had introduced a sound

through the canula, and had felt it impinge on a hard, bony, or calcareous point on the posterior part of the cyst-wall. The existence of this hard spot he (Dr Alexander R. Simpson) had also been able to verify. Some tincture of iodine had then been injected into the cyst, but without any marked result. The patient had felt herself a little relieved, as after the first operation; but in about six weeks afterwards she had sunk and died. At the post-mortem examination the preparation exhibited to the Society had been removed. The uterus was seen to be the seat of a large fibroid tumour, of the intranural kind, which was seated in the left side of the organs, and compressed, distorted, and almost obliterated the cavity. The ovarian cyst was intimately adherent to the enlarged uterus, so as to form, as it were, a single mass, and it had also acquired adhesions of a slighter kind to the mesentery and small intestines. On opening the sac a considerable ball of loosely tangled hair was found lying in its interior, and two or three long hairs of a similar kind were seen growing from follicles in a skin-like patch on the posterior wall, towards its lower end. A little higher up there was a ridge, in the middle of which was a small calcareous deposit, the same which had been felt by means of the sound during life. He (Dr Alexander Simpson) was not aware whether any observations had ever been made in such cases in regard to the colour of the hair, but in the case which he had brought under the notice of the Society the hair contained in the ovarian cyst was strikingly like that growing on the head and pubes of the patient, and it would be interesting to know whether this obtained as a general law.

Dr Gillespie stated, that the hair contained in the cyst he had exhibited was of the same colour as that on the surface of the patient's body.

II. TUMOUR OF THE OVARY AND PERITONEAL HYDATIDS.

Dr Alexander R. Simpson read the following history of a very rare form of ovarian and peritoneal disease, as it had been drawn up by the clinical clerk in Professor Simpson's ward, where the patient had recently died:—

E. F., æt. 22, servant, unmarried, residing in Edinburgh, was admitted into the hospital on February 9, 1861.

The patient states that she enjoyed good health until March 1860, when, after exposure to cold, her menstruation became suppressed. She soon afterwards noticed a swelling in the lower part of the abdomen, which gradually increased in size to such an extent as to compel her to leave her situation as servant on the 1st of December. It has since this period grown rapidly. Her strength has been getting more and more impaired since she first left her situation, so that she now, at the date of her admission, walks with some difficulty. She also states, that about six or seven weeks ago she began to feel shooting lancinating pains in her left iliac region, which continued only for a short time, but recurred at irregular intervals. She was seized about a fortnight ago with a burning pain in the region of the stomach, which continued about a week, but has not been felt for the last four or five days. Her appetite has always been good. Her respiration has been becoming more and more impaired since she left her situation. She has not slept well during the last week. She has a yellowish discharge per vaginam, which has continued three weeks. About a fortnight ago she began to notice dropsical effusions on the inner sides of the ankles. They form in the evening, but disappear before morning. She applied for medical advice on the 8th November 1860, and received some medicine, which caused sickness, but had no effect in arresting the growth of the tumour.

The swelling, when the patient was admitted, measured twenty-one inches from the spinous processes of the vertebræ to the umbilicus. The impulse of a tumour could be distinctly felt by palpation with the fingers of both hands. This tumour was found (by the introduction of the sound) to be unconnected with the uterus, and a simultaneous examination by the vagina and the abdomen. Percussion elicited a dull sound anteriorly, and a clear sound laterally. No bruit could be heard on auscultation.

11th Feb.—The vaginal discharge continues, and the respiration is now becoming more difficult.

15th Feb.—The swelling now interferes considerably with the functions of the digestive and respiratory organs. She has also got a slight diarrhœa. She was tapped to-day through the abdominal parietes, and 190 ounces of greenish yellow fluid were drawn off. This fluid, on standing, deposited a yellowish sediment. She was ordered, immediately after the operation, two grains of opium, and ten drops of the tinctura ferri muriatis, to be taken thrice daily after food. In the evening the pulse was 70 and of moderate strength. The opium caused sickness and tendency to vomit.

16th Feb.—She has slept well during the preceding night, and feels no uneasiness. The pulse is 75 and weak. The diarrhœa is not so profuse. She has still the slight yellowish discharge. She continues to take the iron drops.

17th Feb.—The pulse is 70, and of moderate strength. She has still a little diarrhœa. She is ordered another grain of opium.

18th Feb.—She sleeps well at night, and the diarrhœa has stopped. She passes very little urine. The straps have been ordered to be removed and the surface of the abdomen painted over with the emplastrum cantharidis liquidum.

19th Feb.—She now passes urine oftener, and in larger quantities. She feels pretty well, and continues to take the iron drops.

20th Feb.—She was ordered to-day the following mixture:—Potassii iodidi, ℥ss.; Potassæ acetatis, ℥iii.; Aquæ, ℥vi. Sig.—Cochleare magnum ter indies sumendum.

She is also taking small quantities of gin and potash water.

21st Feb.—The quantity of urine passed is much greater than formerly. She thinks that she is a little stronger to-day. The yellowish discharge per vaginam still continues.

24th Feb.—She feels much stronger, and can now sit up in bed. The swelling has increased two inches since she was tapped. She continues to take the gin, potash water, and the mixture ordered on the 20th February.

27th Feb.—She was ordered one-twelfth grain of elaterium on the 25th, which caused much sickness and vomiting without producing its physiological action on the intestinal canal. She is ordered the following mixture:—Potassæ bicarbonatis. Potassæ bitartratis, ana ℥ss. Mitte pulveres tales decem. Sig.—Capiat unum quarta quaque hora.

3d March.—The appetite and strength have improved considerably since the 27th February, but there is a marked increase in the size of the abdominal swelling. The swelling was painted with the tincture of iodine on the 2d March. It was again re-applied to-day.

8th March.—The swelling has now increased to its former dimensions; and swellings of the ankles at night have reappeared. She now breathes with some difficulty, and the appetite is becoming much impaired.

14th March.—She was again tapped to-day, and 260 ounces of a fluid, similar to that withdrawn on the previous occasion, were removed.

18th March.—She is attacked to-day with symptoms of peritonitis. She vomits most of the food and medicines which are administered. She is getting ice, opium, and beef-tea.

20th March.—She is now very weak, and is getting small quantities of wine and brandy frequently repeated. She also gets ice, beef-tea, and chlorodyne. The chlorodyne, opium, and the other narcotics, when administered, produce sickness and vomiting.

24th March.—She has been gradually getting weaker since the 20th March. She died this morning at five minutes past seven o'clock.

Post-mortem appearances.—It was found that the cyst had ruptured, and that its solid and fluid contents had passed into the peritoneal cavity. The whole peritoneum was found very much inflamed, and the abdominal viscera agglutinated together by inflammatory adhesions. There were also a series of remarkable bodies in the subperitoneal cellular tissue of the pelvis, which appeared to be hydatigenous formations.

III. MALIGNANT DISEASE OF THE OVARY OF A COW.

Dr Alexander R. Simpson showed a preparation of a cow's ovary which had become the seat of a carcinomatous tumour the size of a child's head, of an encephaloid character, and having a series of blood clots interspersed through it.

IV. ACCIDENTAL HÆMORRHAGE.

Dr Cochrane stated, that he had been recently called to see a patient in the eighth month of pregnancy, who had been taken suddenly ill. He found her pale and exhausted, and suffering from occasional weak pains. No hæmorrhage was taking place from the uterus; the os was dilated so as to admit the finger. The administration of an opiate quieted the trifling pains and soothed the patient, and when he returned some hours afterwards he found the patient better, but with the os somewhat more relaxed. The pains recurred, and, after a lingering labour of nearly two days' duration, a dead child was born. Along with the placenta there came away a firm mass of coagulated blood, attached to the centre, and indenting the placenta nearly all across it. This hæmorrhage had probably been going on for some time, but, as the margin of the placenta remained adherent all around, no blood had escaped externally. The patient remained weak for a time, but was now quite well.

Dr Keiller remarked, that he had shown a preparation of the placenta from a somewhat similar case some years ago. In that case the placenta had partially presented, but no hæmorrhage took place till after the head had been expelled; and when the placenta was removed, it was found to have been compressed by a clot formed between it and the uterus.

V. RAPID LABOUR.

Mr Pridie stated, that he had lately been sent for to see a lady in whom delivery had been effected in an unusually short space of time. She had engaged a nurse, but, believing that she would have no occasion for her services for a few days, had given her leave of absence. The same night she walked from her sitting-room to her bed-room, suddenly called to her husband to come to her, and when he arrived he found his wife delivered. The child had been born with one single pain.

VI. PUERPERAL CONVULSIONS.

Dr Keiller stated, that he had recently seen, along with *Dr Nimmo* of Dundee, a primiparous patient who was suffering from puerperal convulsions. She was seized at first in the night, and by her struggles awakened her husband, who found that she had fallen out of bed insensible. On the following day the os was found sufficiently dilated to admit two fingers, and the head could be felt presenting. The patient continued insensible, and the convulsive fits returned with each pain. In the morning the foetal heart was heard beating in the right side. In the evening there was no heart-sound audible at that spot; but he had then recognised it in the left side high up, and suspected that there might be twins. He thought of delivering the woman by turning; but finding his suspicion as to the existence of twins confirmed on introducing his hand, he desisted from the attempt. He put on the forceps and extracted the presenting dead child, and then applied them to hasten the delivery of the second; but ere it could be extracted, its heart, too, had ceased to beat. When he had last seen her on the following morning, the patient was still comatose. A day or two afterwards she recovered and rallied a little; but a week later dysentery came on, under which she sank.

VII. CRANIOTOMY.

Dr Keiller said he had been sent for at mid-day on the preceding Wednesday to see a patient in Blackfriars' Wynd who had been in labour since Sunday. He sent his resident clerk to see what the case might be, and he came to *Dr Keiller* in the evening saying that the case was a very difficult one, and that an attempt to deliver the woman by means of the long forceps had completely failed. On going to see the patient, he (*Dr K.*) found a young woman, a

primipara, very ill, with a very narrow pelvis, and the genital canal already hot, dry, and tender. The waters had been long escaped, and the uterus was so firmly contracted around the child that to turn was impossible. He therefore at once proceeded to perforate the head, although the foetal heart was still beating; and not having with him the proper instrument for performing the operation of cranioclast, he had recourse to ordinary craniotomy, removing the whole of the parietal bones piecemeal by means of a pair of toothed forceps. The patient died the following day,—another melancholy instance of the unfortunate result of too long delay in artificial interference in instrumental labour. For had the woman been aided in her labour, and the delivery completed at an early stage by means of version, in all probability both mother and child might have been saved.

VIII. MALIGNANT DISEASE OF THE UTERUS.—AMPUTATION OF CERVIX UTERI.

Dr Keiller read the following notes of two cases of malignant disease of the uterus:—

1. "R. A. M'D., æt. 38; married.—Admitted into Ward XIII. on the 1st of February 1861. She had been ill for about nine or ten months, but before that time she enjoyed pretty good health. She has had six children, the last of whom was born eighteen months ago. About nine months after her last confinement she was seized with a severe flooding.

"As she was not able to walk about or work, she was removed, with her children, to the workhouse. She got rapidly worse there, from repeated attacks of flooding and the want of proper nourishment.

"On admission, she was suffering from profuse sanguineous discharge, per vaginam. She was excessively weak, and her pulse was very small, slow, and compressible. Her skin had the peculiar tinge of patients affected with scirrhus. There was a very disagreeable smell about her person, easily recognisable some distance from her bed. On making a vaginal examination the os uteri was found to be very open, with its lips of almost cartilaginous hardness, and capable of admitting three fingers.

"On passing the fingers through the os they came in contact with extensive scirrhus deposit: soft, and easily broken down on the surface. The discharge from this, when not mixed with blood, is watery, and has an intensely fetid odour. The uterus is fixed in position. A considerable portion of the vagina at the lower part is not implicated.

"The treatment in this case has principally consisted in the administration of stimuli with nourishing food.

"As she suffers from frequent attacks of diarrhœa, was ordered Chlorodyne $\mathfrak{z}\text{ij}$, Mist. cretæ. $\mathfrak{z}\text{vi}$.—a tablespoonful four times daily; and to have occasionally opiate enemata, consisting of a drachm of laudanum in two ounces of starch.

"Opium given by the mouth in this case causes severe headache and vomiting.

"As a vaginal injection she used a solution of Condyl's disinfectant fluid, in the proportion of two ounces to the pint of water. Under the use of this injection the discharge became much less offensive and smaller in quantity. Latterly she was unable to take any food, from the vomiting and retching the smallest quantity taken into the stomach occasioned. The only thing she was able to retain on her stomach was a little brandy and lemonade.

"Frequent attacks of flooding came on, and she died exhausted on the 9th April.

"Post-mortem examination on the 10th. The lower half of the uterus completely destroyed by the disease; so much so that the fundus was found to be completely separated from it. An abscess was found in the space between the rectum and posterior wall of uterus and vagina, containing a considerable quantity of green fœtid pus. The abdominal and thoracic organs were healthy, but very anaemic, with the exception of the right kidney, which, from the

pressure on the ureter of that side by the scirrhus deposit and abscess, was dilated and almost converted into a cyst."

2. "M. M'N., æt. 40; unmarried.—Admitted into Ward XIII. on the 15th of March 1861.

"She has had one child, born ten years ago. She has always enjoyed general good health, and has menstruated regularly until the beginning of this year. She usually continued unwell seven days, but the menstrual fluid had no disagreeable odour. The first symptom she observed was, that when she menstruated in January she was much longer unwell than she used to be. For the last month, however, the discharge has never dried up, and it now has a very disagreeable smell.

"She has the tinge of skin characteristic of scirrhus very well marked. She is very weak from the continual discharge, but she has no pain, and her appetite is pretty good. Vaginal examination discovers a large cauliflower excrescence growing from the os and cervix uteri. On pushing the fingers past the growth they may be made to embrace an apparently healthy portion of cervix.

"The uterus itself is freely movable, no portion of it being fixed to the surrounding tissues.

"Ordered nourishing diet, and to take twenty drops of tincture of the muriate of iron thrice daily, and to syringe herself twice daily with a solution of Condy's disinfectant fluid.

"9th April.—To-day Dr Keiller removed the growth, after dragging it down to the external orifice of the vagina. The ecraseur was applied, and excision completed in fifteen minutes. No bleeding occurred afterwards. Had two grains of opium after the operation, and one grain more in the evening.

"10th April.—Still no bleeding. Slept well and feels quite comfortable."

This patient continued to improve until she left the hospital.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

THE present Return gives the number of births, deaths, and marriages registered during the quarter ending 31st December 1861, in the 1007 districts into which Scotland is at present divided for the purposes of registration. From these it appears that the births are rather above the average of the corresponding quarter of previous years, while the deaths and the marriages are below.

BIRTHS.

26,265 births were registered in Scotland during the quarter ending 31st December 1861. This gives the proportion of 343 births in every ten thousand persons of the population,—the average of the corresponding quarter during the six previous years having been 342 births in a like population. This is a high birth-rate for the quarter, and considerably above the English proportion, which for the same quarter was at the rate of 326 births in every ten thousand persons,—the average of the corresponding quarters in the previous ten years being 323 births in a like population. Of the children born, 13,544 were males, and 12,721 females, being in the proportion of 106·5 to every 100 females at birth, or a slightly higher proportion of males than is usual.

The proportion of births in the town and country districts varied considerably. Thus, in 126 town districts (embracing almost all the towns with a population of 2000 inhabitants and upwards) 14,727 births were registered; while in the 881 rural districts (embracing the remainder of the population of Scotland) 11,538 births were registered,—thus giving the proportion of 367 births in every ten thousand persons of the population in the town districts, but only 316 births in a like population in the rural districts.

Of the 26,265 births, 23,744 were legitimate, and 2521 illegitimate, being in the proportion of one illegitimate in every 10·4 births, or 9·59 per cent. of the births as illegitimate; and corresponding closely with the results of previous quarters.

DEATHS.

15,022 deaths were registered in Scotland during the last quarter of 1861, being in the proportion of 196 deaths in every ten thousand persons of the population. This is below the average mortality of the corresponding quarter in the six previous years, which was at the rate of 203 deaths in every ten thousand persons. It is also below the death-rate in England for the same quarter, which was in the proportion of 206 deaths in every ten thousand persons,—the average death-rate of the ten previous years being 217 deaths in a like population.

The deaths in the town districts greatly exceeded those in the country districts. Thus, in the 126 town districts, 9337 deaths were registered; while in the 881 country districts the deaths only numbered 5685. This gives the proportion of 233 deaths in every ten thousand persons living in the town districts, but only 155 deaths in an equal population in the rural districts. It is facts like these which point out in the strongest manner the unhealthiness of towns as compared with the country.

Of the deaths, 4295 were registered in October, 5168 in November, and 5559 in December; thus indicating 138 deaths daily during October, 172 daily during November, and 179 daily during December.

INCREASE OF THE POPULATION.

As the births amounted to 26,265, and the deaths to 15,022, the natural increase of the population was 11,243 persons. From this, however, have to be deducted the numbers who emigrated during the quarter. From a Return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 31st December 1861, there emigrated from Great Britain and Ireland 16,559 persons, of whom 1551 were ascertained to have been of Scottish origin. If to that number 349 be added, as the proportion whose origin was not ascertained, the total number of Scottish emigrants during the quarter would amount to 1900, which, deducted from the excess of births over deaths, would leave 9343 as the increase of the population. This, however, takes no notice of the number who emigrate to England and Ireland, which, as has been elsewhere shown, nearly equals the emigration to the Colonies and Foreign countries.

MARRIAGES.

6436 marriages were registered in Scotland during the quarter, being in the annual proportion of 84 marriages in every ten thousand persons. This is rather below the average of the six previous years, which was at the rate of 85 marriages in an equal population. It is also greatly below the English average, which, for the corresponding quarter of the ten previous years, averaged 100 marriages in every ten thousand persons.

Of the above marriages, 3723 were registered in the 126 town districts, and 2713 in the 881 rural districts; giving the proportion of 93 marriages in every ten thousand persons in the town districts, but only 74 marriages to a like population in the rural districts.

1290 marriages were registered in October, 2288 in November, and 2858 in December.

HEALTH OF THE POPULATION.

Much sickness, indeed an unusual amount, has prevailed among the population during the last quarter of 1861; yet it has not been of such a serious nature as to increase the deaths, which are below the average. Influenza, attended by an amount of debility greater than usual, and also of longer continuance, has been general over Scotland; while bronchitic and pulmonic attacks, which invariably attend the close of the year, have been common. In so far as the Registrars' notes indicate, scarlatina and diphtheria appear to have been the prevalent epidemics over the northern half of Scotland, *i.e.* north of the Forth and Clyde. Continued fever, assuming the various forms of typhus, typhoid, and gastric, but not in any case in the epidemic form, seems

also to have been somewhat prevalent. The other epidemics, more especially measles and hooping-cough, do not seem to have been commoner than usual.

Six persons above 100 years of age are reported to have died during the quarter, viz.:—two males, respectively aged 103 years 6 months, and 104 years 11 months; and four females, respectively aged 100 years 6 weeks, 100 years 5½ months, 102, and 105 years.

WEATHER.

The weather has been very peculiar during the quarter, and the excessive fall of rain which characterized the third quarter, also to a considerable extent extended to the fourth. The mean temperature of the quarter, 42° Fahr., was above the average of the six previous years, but below that of 1857, which was as high as 46·1°. This excess of mean temperature was limited to October, for November, with its frequent severe frosts and heavy falls of snow, was nearly two degrees colder than usual; while December was nearly its mean temperature. The changes of weather, however, were very sudden, and the whole quarter, but more particularly the latter end of October and all November, was characterized by the severity of the storms of wind, often attended with heavy falls of rain, from the south-west and west. Dense fogs were especially prevalent during December, and it seemed to be chiefly at such times that influenza affected large masses of the population. From what has been remarked during the past quarter, and previous years, it seems to be an undoubted fact, that though damp, mild, and rainy weather during the colder months of the year seems to diminish the general number of deaths, it has the effect of producing a much larger amount of general sickness. In these Reports it has been shown, again and again, that just in proportion to the severity of the cold is the proportion of deaths; so that the milder the month the fewer are the deaths, while the colder the month the greater is their number. Yet there are good grounds for believing that, notwithstanding the increased general mortality, the colder weather is the more healthy to the general population; for it is almost invariably observed that general sickness is much more common when the winter months are mild and open, than when they are cold and frosty. This last quarter is a good example in point; for sickness was never more general, and yet the deaths are considerably below the average.

The mean barometric pressure, corrected and reduced to the sea level, was 29·936 inches in October, 29·544 inches in November, and 30·020 inches in December. The mean temperature of the quarter was 42° Fahr., being 0·6° higher than the mean of the six previous years. The mean temperature was 49·5° in October, 38·5° in November, and 38° in December. The mean degree of humidity was 90 in October, 87 in November, and 90 in December. The mean number of days on which rain fell was 14 in October, 19 in November, and 13 in December; and the depth of rain or melted snow was 3·34 inches in October, 6·63 inches in November, and 2·98 inches in December,—being altogether a mean depth of 12·95 inches of rain during the quarter, or 2·77 inches above the average of the five previous years. Winds with an easterly point blew 7 days during October, 6 days during November, and 5 days during December. Winds with a westerly point blew 14 days during October, 16 days during November, and 16 days during December.

SCOTTISH UNIVERSITIES COMMISSION.

THE RETIRING ALLOWANCES TO PRINCIPALS AND PROFESSORS.

THE *Edinburgh Gazette* publishes the following ordinance, dated February 8:—“The retiring allowance to be granted to a Principal or Professor in any of the Universities of Scotland, retiring from his office on the ground of age or infirmity, shall be as follows—that is to say, to any Principal or Professor who shall have served for ten years and upwards, and under eleven years, an annual allowance equal to twenty-sixtieths of the annual salary and emoluments of his office; for eleven years, and under twelve years, an annual allowance equal to

twenty-one sixtieths of such salary and emoluments; and in like manner a farther addition to the annual allowance equal to one-sixtieth in respect of each additional year of such service, until the completion of a period of service of thirty years, when an annual allowance equal to forty-sixtieths may be granted; and no addition shall be made in respect of any service beyond thirty years. In reckoning the years of service of a Principal or Professor under this ordinance, the years during which he shall have held the office from which he retires, and also the years, if any, during which he may have held any other office of Principal or Professor in the same, or in any other Scottish University, shall be taken into account. The annual salary and emoluments of a Principal or Professor shall be taken to be the annual average of the salary and emoluments of the office from which he retires, estimated on a period of five years immediately preceding the date of retirement. In cases in which special circumstances may appear to justify an increased rate of retiring allowance, and in cases in which a Principal or Professor may be disabled by infirmity or bad health from performing the duties of his office before the completion of ten years' service, the increased rate, or retiring allowance, if any, shall be such as the Commissioners of Her Majesty's Treasury may determine. The retiring allowances to aged and infirm Principals and Professors under this ordinance shall be paid out of such moneys as may be provided by Parliament for the purpose."

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Case of Caesarean Section.* By ROBERT DYCE, M.D.,
Professor of Midwifery in the University of Aberdeen.

ISABELLA KING, aged 23, four feet in height, had unfortunately become impregnated, and reached the full period of her gestation. She became an inmate of the St Nicholas Poorhouse a few months ago. On Tuesday, January 28, she was first taken in labour; the pains, though slight and distant, continued with some regularity until Thursday, 30th, when the waters came off. For the next two days she seems to have been pretty well, moving about, free from pain, and taking her food as usual. But, on the afternoon of Saturday, 1st February, the pains returned, and for a few hours were regular and increasing in severity. About midnight, as there appeared to have been little progress, and the presentation had not been made out, an opiate was given her, which procured some sleep. On Sunday forenoon, 2d February, I was requested to see her. Her very peculiar expression,—the flat nose, projecting forehead, large head,—with her diminutive stature, and stout, bent, muscular limbs, was very striking, and indicated great deformity; but, on examining her back in the erect position, I was agreeably surprised to find it so entirely free from any lateral curvature. The most noticeable feature here, was the great bend inwards at the loins—so that when she was lying on her back, my hand and arm could be passed quite across under her body almost without touching her. I learned that since the opiate she had slept a good deal, that the pains were very distant and slight, and that there had been none for two hours. Early in the morning she had a smart rigor; and meconium had been escaping with the pains in some quantity from the vagina. She had taken some breakfast with relish, had passed her urine regularly, and the bowels had freely acted: pulse calm.

On examination per vaginam, the sacral promontory first met the finger, right in the centre of the vagina, like a large tumour. The os uteri was well dilated, but its anterior lip was large, flabby, and soft. The presentation could only be felt by carrying the finger forward toward the pubis, and then, as it were, round behind the

promontory. The head was resting on the brim, and naturally placed. The patient was put under chloroform, and an attempt made to turn the child, as delivery I have found under deformity is so much easier in footling than in head presentations. With great difficulty my hand, closely compressed, passed through the brim, and reached as high as the abdomen of the child, but beyond this I could not by any allowable force pass it, as the uterus was strongly contracted around the body of the child. I attempted two or three times by steady pressure to insinuate my fingers through the contraction, but it did not relax in the slightest degree. I therefore withdrew my hand entirely from the uterus, and while doing so I felt for the funis, and found it passing through this hour-glass contraction, so compressed as to be flaccid and pulseless. This, with the free escape of the meconium following the rigor, was conclusive to my mind that the child was dead, and determined me at once to perform craniotomy, although I expressed to Mr Paterson, surgeon, who was then present, my doubts of its succeeding, from the very small space available in the antero-posterior diameter, which barely admitted my three fingers. The perforation was accomplished with difficulty, and that only by an assistant firmly pressing downwards and steadying the uterus, as the head passed up when any attempt was made to pierce the bone. Extraction was commenced and continued at intervals. The skull by various efforts was broken up, and no little care was requisite to prevent injury to the vagina in the removal of the loose pieces of bone. All the bulging parts of the cranium, including the orbits, were brought away at intervals, nothing being left but the base of the skull and a portion of the occipital bone; which was, however, loose. I attempted to change the position of the head so as to bring the face through, but failed. It had become now increasingly apparent that delivery could only be accomplished by the Cæsarean section. My friends Drs Ogston and Fiddes, whose assistance I had asked some hours before, having equally failed in their attempts, quite acquiesced in this opinion, and Dr Pirrie, whose opinion was also asked, at my request consented to perform the operation.

I may mention that the patient, notwithstanding her lengthened sufferings, continued remarkably composed. When free from the effects of chloroform, she made no complaint. She had taken during the day one or two teacupfuls of good beef-tea. She had no thirst. Her pulse did not exceed 100. There was no heat or dryness in the vagina, nor tenderness on pressing the abdomen, nor, in short, any of the evil consequences of protracted labour. And, except from the delay, she was in as favourable a condition as could well be for undergoing the severe operation which was contemplated. After some delay, all was in readiness. The patient was again put under chloroform, the bladder emptied, and she was then brought into a larger room, previously prepared by heating it for the purpose. The operation was performed in presence of Drs Ogston, Fiddes, Suther-

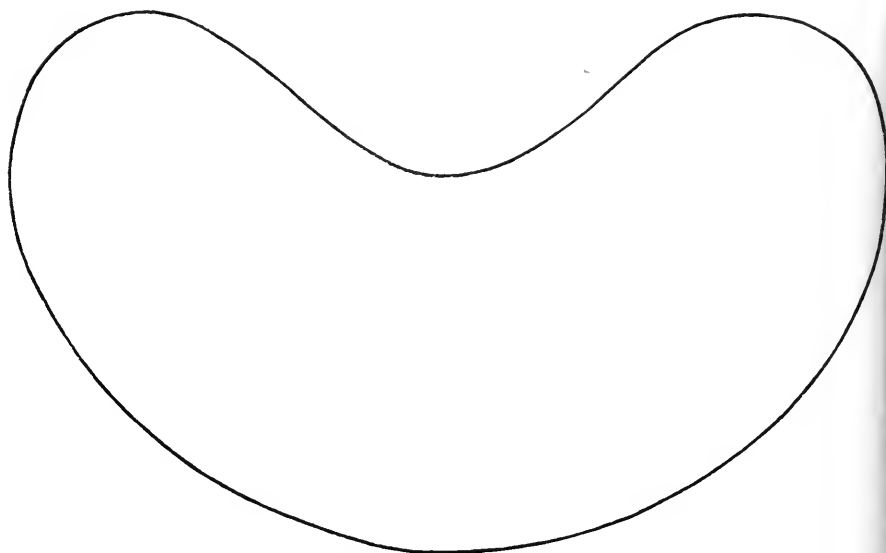
laud, Paterson, and myself, with three assistants, Messrs M'Lagan, Paterson, and Mackie.

The abdominal walls being made tense, an incision was commenced a little below the umbilicus, in the situation of the linea alba, and carried downwards in a straight line to within an inch of the pubis; the various layers of tissue were cautiously cut; the peritoneum was punctured, and laid open to the same extent upon a director. The uterus now came into view, dark and livid: it was carefully opened, and the incision enlarged on the finger, upwards and downwards, but to a somewhat less extent than the external wound. The side of the child presented, which was readily lifted out by the arm and head. The hips and lower limbs not following, Dr Pirrie passed his hand, and detected a contraction in the uterus resisting the removal of the body: the same which I had noticed early in the day, when attempting to turn. The placenta was readily and speedily removed. There was no hæmorrhage; the only untoward circumstance was the escape of a considerable quantity of meconium from the child into the womb, as its nates were being freed from the constriction in the uterus. Only one knuckle of intestine twice showed itself, which was immediately replaced. The surface of the uterus, which speedily contracted, was lightly sponged, the wound in it put in apposition, and the external incision closed by seven ligatures of silver-wire. Adhesive plaister, compresses, and a broad binder completed the operation. To ensure contraction of the womb, the chloroform had been discontinued as soon as that organ was laid open. The patient was not, however, thoroughly awake until the operation and dressing had been completed. Some warm brandy and water was given her, which she almost immediately vomited; when two grains of solid opium were ordered at once, and one grain every four hours, with beef-tea and brandy at intervals.

The first night the woman slept a good deal; but everything was vomited, sometimes immediately, often not for an hour: hiccup had annoyed her. She had no pain in the abdomen, though occasionally she had pains in the back, like after-pains. Her pulse was exactly 100. She looked composed, and smiled on our entrance, on the following morning. Towards the afternoon of that day (Monday), the matter vomited became very dark, like coffee-grounds, and distinct indications of prostration appeared. She passed her urine naturally and in large quantity, and was anxious for food. Laudanum was substituted for the opium, but it was equally rejected. The compress and binder, with the lowest stitch, were removed, and tepid water-dressing substituted, and brandy or wine ordered throughout the night *ad libitum*. On the morning of the 4th, she was manifestly worse. Respiration was laboured, the retching and vomiting had continued, followed by exhaustion; there was no tympanitis, or much uneasiness in the abdomen; the pulse was rapid, and weak. At 3.10 p.m. she died, 43 hours after the operation.

On the day following the patient's death a post-mortem examination was made. The whole length of the body was exactly 4 feet. The head was that of a full-grown adult. The upper limbs measured 17 inches in length; the lower, 20 inches; the trunk, 21 inches. The edges of the wound of the abdomen were firmly adherent, so as not to separate on the removal of the ligatures: there was a very small quantity of thin bloody fluid effused within the cavity of the abdomen: some of the coils of the small intestines were a good deal injected. The uterus was large, and occupied the left side of the belly: the wound in it measured $2\frac{1}{2}$ inches: a clot of blood, about 4 fluid oz. in bulk, filled its cavity. From the appearance of the interior of the womb, the placenta had been attached to its upper and back part. The vagina contained some grumous blood, and showed a superficial rent, about 2 inches in length, extending from near the external orifice upwards on the right side.

The subjoined outline gives a correct representation of the size and shape of the brim of the pelvis.



The measurements of the pelvis at the brim were—

	Inches.
Antero-posteriorly,	2
Laterally, from ileum to ileum,	$4\frac{7}{8}$
Obliquely,	$4\frac{1}{2}$
Depth of pubis,	$1\frac{1}{2}$
Depth behind from promontory to the point of the coccyx,	$4\frac{1}{2}$
Outlet—	
Between the tuberosities of the ischia,	$3\frac{1}{4}$
From arch of pubis to point of the coccyx,	$3\frac{1}{2}$
From brim of pelvis to lowest point of the ischium,	3
The lumbar vertebræ formed nearly a right angle with the sacrum.	

The infant extracted by the operation weighed 8 lbs., allowance being made for the absence of the brain and greater part of the bones of the head. Its measurements were—

	Inches.
Bi-parietal from one ear to the other,	4
Occipito-frontal,	4½
Occipito-mental,	5½
Nape of neck to root of nose,	4
Length of body,	18
Centre of body falling exactly at the navel.	

Remarks.—We have, in the above details, another case added to the melancholy list of unsuccessful operations on the parturient female, and one corroborative of the fact, as noticed by Tyler Smith, that nature, when engaged in one important office, the absorption of tissue, cannot readily be made to undertake another equally important, that of restoration (under injury) to health.

On fully considering this case, I think that there cannot be a question but that delivery ought to have been prematurely induced, not with any view of saving the child, because no viable child could ever have passed through so limited a space, but solely with the view of saving the woman's life, as a fœtus at the sixth month would have been more easily brought away than one more advanced. But as I only saw her at the eleventh hour, when she was at her full time and actually in labour, regrets were then useless. A more important question, however, arises, was the subsequent treatment the most appropriate, in commencing by turning, and subsequently performing craniotomy, before resorting to the Cæsarean section? Of the advantages of turning, under deformity, as a substitute for craniotomy, I have a most decidedly favourable opinion. I have succeeded in several instances, where the child had in previous labours been destroyed, and with the satisfaction of saving more than one life. But even should the child's life not be saved, I consider that it is no small matter—no little consolation—to a mother to find that her infant, though dead born, has not been mutilated. The principle on which this operation is proposed, I need not stop to notice. We have the authority of Denman for asserting "that by turning the child the chance of saving its life is greater than can be gained by the use of any instrument," and Professor Simpson's arguments on this subject are so convincing as to seem to warrant the admission of this operation as an established one, under deformity, as a substitute for craniotomy and the long forceps. I therefore made the attempt, but finding that every effort was unavailing, and having sufficient evidence of the death of the child, I did not then hesitate to craniotomize. The difficulties here through every stage were very great; yet it is matter of no little comfort to me that, considering the repeated attempts made both by myself and my friends during the day to remove the head piecemeal, no more injury was done to the passages than the superficial rent at the lower part of the vagina. The uterus did not suffer at all, though there was a

source of constant anxiety lest the elongated lip should be included in any of our attempts; neither had the bladder, as the woman passed her urine freely and naturally after the removal of the child; nor was the promontory injured.

I have no doubt that there may be found some amongst the profession, who, with these pelvic measurements before them, will question the propriety of hysterotomy, and insist that craniotomy and evisceration ought to have succeeded, and perhaps may adduce cases in evidence. But I am quite satisfied that each case of extreme deformity must, in a great measure, be treated less on a general principle than on its own individual peculiarities, and that such and such measurement should not exclusively be held as indications for the operation, irrespective of collateral circumstances. In so far, however, as regards the measurements in this case, they correspond with those generally admitted as rendering the Cæsarean section justifiable and necessary. The antero-posterior diameter was but two inches, and although from ileum to ileum there was double that space, my decided impression is, that no increase laterally can make up for the loss in the conjugate diameter, and that, taking into account the large size of the child, and the impossibility of effecting any change in its position, continued attempts at farther demolition of its head, along with the time necessarily required, would have so increased the risk of injury to the mother, as to have irremediably sealed her fate. My only regret is that, being so nearly correct in my estimate of the space, I did not propose the final operation at an earlier period in the labour, when the woman's strength was entire, and before other means had been tried. Still the fearful mortality under even the most favourable circumstances, makes one shrink from proposing an operation of this nature until every other means have failed.

ARTICLE II.—*Notice of some of the Cases treated in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh, during February 1862.* By THOMAS ANNANDALE, M.R.C.S. (Eng.).

Cases of Hydrocele.

CASE 14.—D. M., æt. 65, admitted 17th January 1862; with a large hydrocele on the right side. It commenced twenty-three years ago as a small tumour, after the patient had received a blow on the testicles; since then the swelling has been gradually increasing in size.

20th.—Mr Syme tapped the hydrocele to-day, and drew off 22½ ounces of straw-coloured serum; ʒiij of tinct. iodine were then injected.

25th.—A considerable amount of inflammatory swelling has followed the operation.

30th.—The swelling is now diminishing; the patient feels no pain.

17th February.—Dismissed cured.

CASE 15.—A. C., æt. 21, admitted 21st January 1862; with a hydrocele on the right side, the size of an orange, which had existed for six years.

23d.—The hydrocele was tapped to-day by Mr Syme, and 5 ounces of straw-coloured serum drawn off; ʒij of tinct. iodine were injected.

28th.—The usual amount of inflammatory swelling has followed the operation.

16th February.—Dismissed cured.

CASE 16.—J. M., æt. 35, admitted 27th February 1862; with a hydrocele on the right side, which had troubled him for four years.

27th.—Mr Syme tapped the hydrocele and drew off 8 ounces of the usual kind of fluid; ʒij of tinct. iodine were injected.

8th March.—Dismissed cured.

CASE 17.—G. M., æt. 17, admitted 25th January 1862; with a hydrocele on the right side, which had been there for two years.

30th.—Mr Syme tapped the swelling and drew off 3 ounces of serum of the usual colour; the testicle was found to be much enlarged, but notwithstanding, ʒij of tinct. iodine were injected.

6th February.—Not more than the usual amount of inflammation followed the operation.

16th.—Dismissed cured; the swelling of the testicle being also much diminished.

Remarks.—These four cases may be taken as examples of the easy, safe, and effective method of treating hydrocele by injection with iodine, and it seems strange that there should be a desire on the part of some members of the profession to employ other tedious and dangerous operations for the cure of this disease, more especially when the treatment by the injection of iodine, if properly performed, proves successful in every variety of hydrocele. The first of these cases was a very large hydrocele, and although the process of cure in such cases is generally more tedious, the swelling following the operation taking a longer time to disappear, yet the result was perfectly satisfactory.

The second and third cases present nothing remarkable, being merely ordinary examples of hydrocele. The fourth case, however, is interesting from the complication of the swelled testicle, as it used to be supposed that, when this complication was met with, the injection of fluids into the tunica vaginalis was objectionable; but Mr Syme has shown that the injection of iodine in these cases is beneficial and not injurious, having noticed that iodine, when injected, seems to have a good effect upon this and other glands when enlarged.

There was lately a woman in these Wards who had a great enlargement of the thyroid gland, which occupied the whole neck:

the tumour was principally solid, but at one point fluctuated. Mr Syme tapped this portion, drew off a small quantity of fluid, and injected iodine; at the end of two months the patient returned home cured, the large and solid tumour having been almost entirely absorbed. I have also had an opportunity of seeing in Mr Syme's private practice other cases of a similar nature, and with an equally favourable result.

Polypus of the Nose.

Three cases of polypus of the nose have entered these wards during this month, one being an example of the bleeding polypus, the other two belonging to the ordinary mucous variety.

CASE 18.—J. M'K., æt. 31, admitted 20th February 1862. The patient has had occasional bleedings from the nose for twelve years. Three years ago, he began to feel the right nostril becoming obstructed, and felt some pain in the same situation. Two years ago, an attempt was made by a surgeon to extract a polypus, but only a small portion was taken away. Six months ago, another small portion was removed, but the symptoms of obstruction still continued, and the bleeding did not cease. For the last few months these symptoms have been getting much worse. On admission the right nostril was entirely obstructed, and a polypus could be felt growing into the pharynx from the margin of the posterior nares.

20th.—Mr Syme, having seized the base of the polypus with the ordinary forceps, tore it away from its attachment to the bone: a slight gush of blood took place, but it soon ceased. The polypus removed consisted of a large irregular mass, of a structure much softer than that of the ordinary fibrous polypus.

28th.—The patient has returned at intervals of a few days to show himself: several loose bits of the tumour, which had been detached at the operation, have since come away.

1st March.—The patient came to show himself: the nostril is now quite free.

In connexion with this case I may mention an example of the fibrous polypus, which was in these Wards at the beginning of the present winter.

CASE 19.—G. R., æt. 14, admitted 27th September 1861. One year ago, the patient began to suffer from an obstruction in the left nostril, with pain in that side of the nose and in the corresponding ear. Two months after, he had two or three severe attacks of bleeding from the left nostril, and since then he has had constant bleedings from the nose. Three weeks ago, the patient felt a swelling at the back of the throat, and the right nostril also became blocked up. He was then seen by a surgeon, who tried with a wire and canula to remove the tumour, but did not succeed. During the last few weeks the tumour has been getting larger, and the pain in the nose and ear more severe.

On admission both nostrils were obstructed, the left one completely so. No tumour could be seen through the anterior nares, but on passing the finger up behind the soft palate, a firm mass could be felt attached to the margins of the posterior nares.

28th.—Mr Syme passed the forceps through the anterior nares, seized the root of the tumour, and tore it off from its attachment. The polypus was too large to pass by the nostrils, but was readily removed by the mouth. Some hæmorrhage took place during the operation, but it soon ceased. A little oozing continuing from the left nostril, it was plugged. The polypus weighed five drachms and a half.

30th.—Plug removed; the patient feels the nostrils quite free.

5th October.—Dismissed cured.

CASE 20.—J. M'K., æt. 60, admitted 26th February 1862; with a mucous polypus in the left nostril. The patient has felt this passage obstructed for the last two months, but attributed it to cold.

26th.—Mr Syme removed the polypus to-day, together with a portion of the superior spongy bone. The polypus was so firmly connected with this bone, as to show how impossible it would have been to have completely extirpated the disease without taking along with it the bone from which it sprung.

1st March.—The nostril is now quite free. Dismissed cured.

CASE 21.—A man, æt. 45, applied for advice on 27th February 1862. His right nostril has been getting gradually blocked up for the last few months. Mr Syme found that there was a large mucous polypus in the right nostril. This was removed, and the patient returned home with the passage quite free.

Remarks.—A point of great interest in regard to the first case, was the soft nature of the tumour, which resembled somewhat in consistence the ovary of a frog. It might have been inferred from this circumstance that the disease was malignant; but in the present case, the absence of any affection or displacement of the surrounding bones, signs which are so characteristic of malignant polypus, caused Mr Syme to take a favourable view of the case, as he had before successfully removed tumours of an exactly similar structure from the same situation.

The other cases which I have related are good illustrations of the remarks made by Mr Syme on this disease, in his late "*Observations in Clinical Surgery.*"

Case of a Horn growing from the Hand.

CASE 22.—R. S., æt. 79, admitted 5th February 1862; with a horn growing from the back of his right hand. The patient has also an epithelioma on the lower lip, at its left angle, which has existed nine months. The horn commenced to form fifteen years ago, on the surface of a small sore. Since then it has been constantly growing; but the patient has always pared it down when it became more than an inch or so in length.

On admission, there was a horn an inch and a quarter long, and one inch in diameter at its base, springing from a portion of hypertrophied skin, over the metacarpal bone of the fore-finger.

6th.—Mr Syme cut off the horn together with the hypertrophied skin at its base. The cancer of the lip was also removed at the same time. A section being made through the entire length of the growth, including the skin from which it grew, small portions of this section were placed under the microscope. The base presented the ordinary appearance of the epithelial layer of the skin; the epithelial cells becoming compressed as they approached the horny growth, and gradually merging into the structure of the horn.

18th.—The lip is quite healed, and the horn on the hand is contracting.

24th.—Dismissed cured.

Remarks.—Although we occasionally see growths, simulating horns, spring from the surface of certain sores, the formation of true horn is very rare in the human subject, and when it does occur, is generally connected with the skin or some of its structures, morbid or otherwise. This case, according to the patient's statement, commenced by a simple and superficial sore on the hand. During last winter session there was a patient, a chimney-sweep, in these Wards, who had a horn two and a half inches in length, removed from an epithelial cancer of the scrotum. It had been growing for six months, was curled in form, hollow in its centre, and exactly resembled a sheep's horn. In the present case the horn was quite solid, and similar to that which grows from the skin of the rhinoceros.

Cases of Extraction of Foreign Bodies.

CASE 23.—J. G., æt. 52, admitted 17th February 1862. Last July, the patient got stabbed in the right shoulder with a shoemaker's knife during a drunken quarrel, the blade of the knife breaking off in the wound. Next morning he went into the Glasgow Workhouse, where he was examined by several surgeons, but they did not detect the foreign body. The wound closed in a fortnight, and remained so until three months ago. During all this time the patient has followed his employment as a shoemaker, although the arm has at times been very painful. Three months ago, the wound opened again, and has remained open until his admission here, discharging small quantities of matter from time to time. On examination, there was a wound about a quarter of an inch in length at the upper and outer aspect of the right deltoid muscle. Projecting through the wound was a small portion of metal, being one corner of a much larger piece, which could be felt in the substance of the muscle. Mr Syme enlarged the wound and drew out the blade of a knife, three inches in length, and one inch broad at its base, which gradually tapered to a point.

1st March.—The wound is healing nicely.

6th.—The patient has left the hospital, the wound being nearly closed.

In connexion with this case, I may mention two other cases which occurred here during last session.

CASE 24.—A. M'D., æt. 8, admitted 9th August 1861. Seven months ago, the patient was sliding on some ice, and fell on his right side. He had a common lead pencil in the left breast-pocket of his jacket at the time. This was driven into his side by the force of the fall, and broke off about its middle, one half remaining in his side, the other half being left in his pocket. He was seen shortly after the accident by a surgeon, who could not detect the portion left in the patient's side; the same gentleman saw him next day and enlarged the external wound, but still was not able to remove the pencil. The wound healed in a few days, and the boy got quite well, and enjoyed good health until two months ago, when the wound re-opened and discharged some matter, and has continued to do so at intervals until his admission here. On examination, there was a small sinus over the seventh rib, on the left side, a little external to the nipple; on grasping the tissues in the neighbourhood of the sinus, a foreign body of an elongated form could be easily felt.

9th August.—Mr Syme enlarged the sinus and pulled out a piece of lead pencil, which was two inches long and of the ordinary thickness.

14th.—The wound is healing well, the patient returned home to-day.

CASE 25.—J. K., æt. 60, admitted 29th October 1861. Nine months ago, the patient sat down on a chair on which a large darning needle was lying. It entered the lower and inner margin of the right buttock. One hour after, a surgeon saw the patient and enlarged the wound, but could not find the needle. The patient says, that he himself could feel the needle near the point of entrance for two months after the accident, but at the end of this time it began to change its place, and worked its way up the inner side of the thigh to the groin; it lay here for three months, and then began to move up towards the belly, and reached a point in the abdominal walls, about three inches above Poupart's ligament, and a little to the right of the mesial line of the abdomen. Whilst here, another unsuccessful attempt was made to extract it. The needle has remained in this last situation until his admission here. On examination, there was a small cicatrix on the inner and lower aspect of the right buttock, where the needle had entered, but there were no external marks to indicate the direction it had taken to reach its present situation. At the point on the abdominal walls mentioned above, the skin was thickened and discoloured, and a foreign body could be felt underneath it.

29th October.—Mr Syme made a small incision over the body and removed it. It was $2\frac{1}{4}$ inches in length, and the thickness of an

ordinary knitting needle. The patient made a good recovery and returned home in a few days.

Remarks.—The first two cases show the difficulty that is sometimes experienced in detecting foreign substances which have been forced through the external tissues of the body. In both of these instances, materials which we would expect to be easily detected were not discovered by the medical attendants of the patients, although they were seen within a few hours after the injuries had been inflicted. How is this to be accounted for? There is no doubt that when portions of metal, wood, or other like things, enter a living muscle, they act as irritants to the muscular fibres, and cause them to contract over the foreign body, and we can understand that a large muscle may draw such substances among its fibres, and consequently prevent their detection; but in Case 24, the non-discovery of the portion of pencil cannot be explained in this way, as there are no muscles here of sufficient size in which the substance could have been buried. It shows, therefore, the necessity of a careful examination of the wound, and inquiring into the nature of the accident in all injuries where there is a suspicion of a foreign body having entered. Case 25 is an illustration of the fact so well known, that needles and other like substances entering at one point may travel through the body without causing any mischief, and ultimately be removed at a considerable distance from where they went in.

Deep-seated Suppuration in the vicinity of the Shoulder-Joint.

CASE 26.—A. W., æt. 57, admitted 5th February 1862. The patient is a flaxdresser, and is employed for ten or twelve hours daily dressing flax. During this time both his hands and arms are constantly moving backwards and forwards, but not with any great strain on them. Within a yard of where he works is an open window, through which a strong draught of air is constantly passing. Five months ago, while at work, he suddenly felt a severe pain in the left shoulder, which became much worse the next day; the shoulder and arm swelled, and to relieve this, poultices, and afterwards blisters were applied, but without any permanent benefit at the time. Since then the arm has been quite useless, although the swelling has somewhat diminished. On admission the patient could not raise his arm, and the other movements of the shoulder-joint were very limited. On the anterior aspect of the joint, immediately above the insertion of the pectoralis major muscle, was a hard diffused tumour, painful to the touch, in which Mr Syme detected deep-seated fluctuation.

6th.—An incision was made into the tumour by Mr Syme, and a small quantity of pus let out: the collection of matter was apparently external to the joint.

28th.—Since last date the patient has made great progress: the wound is now all but healed, and he can use his arm freely in every direction.

1st March.—Dismissed cured.

Remarks.—A peculiarity in this case is the suddenness with which the attack came on. The patient, a most intelligent man, distinctly stated that his arm was perfectly well immediately before the pain seized him, and that he was not aware of giving the arm any sudden strain or other injury at the time. The occurrence of the suppuration may be explained by the constant tension to which the muscles of the arm were subjected during the patient's employment. Mr Syme observed many years ago, that when the muscles of a limb were kept in a state of constant activity for some time, it had the same effect in producing abscess and exfoliations from the bone to which these muscles were attached, as in those cases where a sudden and violent strain had been sustained. The exposure to the draught of cold air from the open window may also have assisted in causing the inflammation. The patient owed his happy recovery to the free incision made into the deep-seated collection of matter, which, if it had been allowed to remain, would soon have caused serious mischief from its very close proximity to the shoulder-joint.

Internal Abscess of the Tibia.

CASE 27.—M. B., æt. 44, admitted 25th February 1862. Twenty years ago, the patient's left leg began to swell, and she was confined to bed with it for eleven months. At the end of this time it got better, and remained so for six years, when it turned bad a second time and kept her in bed again for six months. At this time an opening formed in the calf of the leg and discharged matter for many weeks, and then healed. The leg remained better until five months ago, when the limb swelled a third time, and another opening formed on its anterior aspect. During all these twenty years the patient's leg has never been well, and she has been always liable to attacks of pain in it, the pain not being constant but coming on at intervals, worst at night, and limited to one particular point. On admission, the upper two thirds of the left tibia were much enlarged; the soft tissues covering the bone were also considerably thickened. On the anterior aspect of the leg, at its upper third, was a small opening, which led down to a cavity in the interior of the bone, as ascertained by the introduction of a probe. The patient referred the seat of the pain to a point just over this sinus.

27th.—Mr Syme, having recognised an abscess in the interior of the bone, trephined the tibia at a point between its upper and middle thirds, including the sinus in the space occupied by the trephine. As soon as the trephine was removed, a teacupful of pus escaped; and in the interior of the bone was found a large cavity, lined by a distinct pus-secreting membrane of considerable thickness.

3d March.—The pain has now quite left the bone, and the swelling of the leg has already diminished.

10th March.—The patient still continues free from pain, and the wound is contracting.

Remarks.—This poor woman had suffered from the disease for the long space of twenty years, and by the application of the trephine at once obtained relief from the pain. Last summer, there was a young man in these Wards who had suffered from the same complaint in the upper third of the tibia for twelve years. The bone was trephined by Mr Syme, and the patient returned home quite cured at the end of a month. A few years ago, there was another patient in these Wards with the same affection, and in the same bone; the symptoms had lasted twenty-one years, and had caused the man most frightful suffering. The trephine was also applied in this case and with complete success.

*Dislocation of the Shoulder-Joint of Seven Weeks' Standing.
Reduction.*

CASE 28.—U. U., æt. 72, admitted 19th February 1862. Seven weeks ago, the patient fell on his left shoulder. He was seen soon after by a surgeon, who told him that the joint was dislocated. It was reduced, but the patient was never able to use the arm afterwards. On admission there was a dislocation of the head of the humerus forwards.

19th.—Mr Syme reduced the dislocation, extension being made by means of the pulleys, and afterwards by the heel, in the axilla. The head of the bone slipped into its place after the extension had been kept up for a short time, but immediately returned to its former position when this force was withdrawn; it was, however, easily reduced again, and the elbow bandaged firmly to the side.

8th March.—The bandages have been removed, and the patient is now beginning to use the arm.

ARTICLE III.—*An Inquiry into the Chemistry and Properties of the Cytisus Laburnum.* By THOMAS SCOTT GRAY, M.D., L.R.C.S.E., Dundee.

THE medical or rather the medico-legal history of the *Cytisus laburnum* is confined to the present century. The ancients make no mention of its poisonous properties, and its physiological and therapeutical actions have never been properly investigated. The term *Cytisus* is derived from *Cynthus*, one of the *Cyclades*, on account of some of the species having been first found in that island. *Laburnum*, according to Haller, is derived from the Alpine name *L'Aubours*. The French call it *Cytise des Alpes*, *Abours*, and *Faux Ebenier*. It is a native of *Helvetia*, and was first cultivated

in 1596. It is now cultivated in Britain, on account of its beauty, and is very common in shrubberies and plantations in all parts of Scotland.

The *Cytisus laburnum* belongs to the Linnæan class and order *Diadelphia Decandria*, and to the class and sub-class *Dicotyledones calycifloræ* of Decandolle.

The active principles can be extracted from all parts of the tree. The seeds yield them in large quantity. The bark of the root, stem, and branches, is quite as fertile a source. The leaves, when green, yield them. The flowers and pods likewise contain them, but in much smaller quantity than those parts of the tree already mentioned. The wood also, when broken into small pieces and brought in contact with boiling water, will yield them in small quantity.

The leaves are most active in April and May before the flowers expand. The pods and seeds should be collected and dried in the beginning of October. The flowers are most active in July, when they are in full bloom. The bark of the root, stem, and branches, may be employed for extracting the principles during any period of the year.

The different parts of the *Cytisus laburnum* readily yield their principles to water; and the most convenient mode of extracting them is in the form of decoction. This preparation, when concentrated and carefully filtered, presents a beautiful cherry-red colour. It has an acid reaction, reddens litmus, and has a disagreeably bitter nauseous taste. It gives, with a solution of acetate of lead, a greyish-white precipitate soluble in acetic acid. It strikes a deep dark-red colour with the persalts of iron. It gives, with the protosulphate of iron, a pale reddish precipitate, which adheres together in small shreds or masses. It causes, with the compound liquor of iodine, a copious gelatinous red precipitate; and when a solution of tannin is added to it we get a greyish-white deposit. By heating the red oxide of lead with nitric acid, we get a dark product, which, after the addition of this fluid in small quantity, and the continued application of heat, becomes converted into a brilliant yellow solution. Nitrate of silver gives a white flaky precipitate, soluble in nitric acid, forming a faint yellow solution. Nitric acid, on being added to the decoction, produces no deposit, but changes the colour of the concentrated solution to a greenish-yellow, which, on the acid being added in excess, assumes an orange tint, and, when heated, again changes to a faint yellow-coloured solution. Lime water causes a faint yellow colour and slight turbidity. After boiling the bark or any other part of the tree in alcohol, we obtain a greenish-yellow solution, which, on cooling, deposits a substance in the form of flakes. These flakes, when collected and the alcohol removed from them by pressure, have a nauseous oily taste, and are readily soluble in water. This solution in water has narcotic properties, and consists of one of the

active principles of the laburnum, which is not very soluble in cold alcohol. I shall describe this substance at greater length after I have given an outline of the method by which we can extract from the crude drug three apparently different active vegetable principles. In the meantime, this short sketch is sufficient to show that alcohol is not a convenient solvent for extracting the active principles of the laburnum. It is much inferior to distilled water, in which they are all readily soluble. Moreover, by using the latter, we exclude the chlorophyll. The French chemists, MM. Chevallier and Lassaigue, about twenty years ago, made an analysis of the French laburnum. Their observations will be found in the *Journal de Pharmacie*, iv., 340-554. They attributed the poisonous properties of the laburnum to an active principle which they called Cytisin. They described it as a nauseous, bitter, neutral, uncrystallizable substance, which in small doses kills animals amidst vomiting and convulsions. The object of the following remarks is to show that this analysis is incomplete, and that there are three active principles existing in the different parts of the tree. I have tried to extract them in various ways; and for this purpose I have employed most of the solvents and reagents used by pharmaceutic chemists. The following mode of analysis is the simplest and most economical, and I believe the only one by which they can be separated with any degree of purity:—

The parts of the tree from which it is desired to extract the principles are to be boiled in distilled water until a concentrated decoction is obtained. This fluid is then to be carefully filtered, and then precipitated by a solution of acetate of lead in distilled water. The mixture is to be allowed to stand for some time, and is to be agitated frequently during this period. The precipitate is then to be collected on a filter, and allowed to remain until all the fluid has passed through; or the fluid portion may be more effectually separated by pressure through a cotton filter. The insoluble substance on the filter is now to be collected, and agitated in distilled water. Sulphuretted hydrogen is to be passed through it while suspended in the water, until all the lead present is converted into sulphuret, which is to be removed from the fluid portion by filtration. The fluid which passes through the filter is to be heated until the acetic acid and excess of sulphuretted hydrogen are driven off. There then remains in the form of extract a dark-red substance with an acid reaction. This substance may be called laburnic acid. I shall afterwards describe this substance more minutely when I have finished giving a description of the analysis. Sulphuretted hydrogen is next to be passed through the solution obtained after filtering the precipitate produced by the acetate of lead, until all the lead is converted into sulphuret. The sulphuret of lead is now to be removed by filtration. The fluid which passes through is to be heated until a semifluid extract is obtained. The excess of sulphuretted hydrogen, and the acetic acid derived from

the decomposition of the acetate of lead, are thus wholly removed. The substance now obtained is what the French chemists, Chevallier and Lassaigue discovered, and called Cytisin. We may, however, remark, that these chemists, by using alcohol as their solvent, failed to keep in a state of solution the greater part of a principle of some narcotic power which is not very soluble in cold alcohol. The extract is allowed to cool, and then pure pyroxylic spirit is added to it in the proportion of a drachm of the former to an ounce of the latter.

The mixture is to be allowed to stand for ten or twelve hours, and agitated frequently during this period; it is then filtered through a fine cotton cloth, and subjected to such a pressure as will remove all the spirit from the solid portion remaining on the filter. If this precaution is avoided, there remains mixed with the solid portion a small quantity of that substance which the spirit holds in solution after the latter evaporates. In order to avoid this fallacy, it should be agitated a second time with a quantity of pyroxylic spirit. When the substance is sufficiently dry it is exposed to a strong heat, so as to remove any fluid which may possibly remain. The evaporation may be favoured by reducing it to a fine powder in a mortar, and then reapplying the heat; and there is then left a dark-greyish powder which may be conveniently called *Laburnine*.

The pyroxylic spirit which passes through the filter is now to be evaporated by a gentle heat. The spirit may at the same time be condensed, and will be found to be pure; it may be used in a subsequent analysis. The spirit may be conveniently evaporated by placing the vessel which contains it into one containing boiling water. It can thus be evaporated at a very equable temperature: from the evaporation a dark-red uncrystallizable extract is obtained called *Cystinea*. This term will serve to distinguish it from the Cytisin of Chevallier and Lassaigue.

We cannot make any advantageous use of chloroform or sulphuric ether in extracting and separating the principles of the laburnum. When we agitate the decoction with a small proportion of sulphuric ether, the latter, as it rises to the surface, carries with it a portion of the active principles, but it does not enable us to separate them. When the ether is added in excess, it rises to the surface without taking with it any of the principles. Similar remarks may be made concerning the action of chloroform. Charcoal is of little use in enabling us to separate the principles from each other. It does not, however, absorb the laburnine so readily as it does the other two principles. Charcoal will, however, be found useful in cases of poisoning with the laburnum. I shall subsequently refer to this when I come to discuss the treatment which should be adopted when too large doses are taken.

I have, in addition to these principles, detected in the residuum of the combustion of the crude extract some lime, and occasionally a trace of silicon. I have also noticed once or twice, after allowing

a small quantity of the decoction to evaporate spontaneously on porcelain, a star-like group of crystals. They resembled the crystals of citric acid.

I shall now give a more minute description of the different active principles which I have spoken of in the analysis, and shall first enumerate the characters of laburnine.

It is a greyish-brown uncrystallizable powder, and has a peculiar smell, which is most marked when it is mixed with water. It has a slightly nauseous oily taste, but no bitterness or acrimony, and is not deliquescent. It is insoluble in cold pyroxylic spirit, but sparingly soluble in it when hot. It is sparingly soluble in cold spirits of wine, but more soluble in hot alcohol. It is readily dissolved when agitated with water, forming a slightly reddish-coloured solution, which has a nauseous oily taste. It is insoluble in sulphuric ether, produces no change on the colour of turmeric or litmus paper, and has no acid or alkaline reaction. It is thus a neutral principle, existing in this condition in the tree, and produces no very characteristic reactions when mixed with the other substances derived from the vegetable or animal kingdoms. It does not produce any precipitate with acetate of lead, oxalate of ammonia, nitrate of silver, chloride of barium, Schulze's liquid (perchloride of antimony added in small quantities to phosphoric acid), chlorides of platinum and gold, or the salts of iron. It gives, with the subacetate of lead, a hazy yellowish deposit, and does not produce any peculiar changes of colour when added to ferrocyanide of potassium, bichromate of potash, peroxide of lead, peroxide of manganese, or the chlorate of potash moistened with sulphuric acid. I have also mixed it with other substances remarkable for their beauty of colour, as carbazotic acid, and the preparations of uranium, but could obtain no decided change. It is not changed by the addition of any of the mineral acids or bases. There is no distinct precipitate on the addition of tannin. If a little of the sulphate of copper is dissolved in distilled water, to which a little sulphuric acid has been added, and then a little of the laburnine in water is added to this solution, the blue colour is changed to a pale grass-green tint.

Characters of Cystine.—A thin layer of this substance spread on porcelain has a slightly yellowish colour; but when in considerable quantity it has a dark red hue. It has an intensely bitter taste, and an odour somewhat resembling that of tobacco. The odour is very marked when this substance is being dissolved in hot water. It dissolves slowly in cold, but very rapidly in hot water, forming a yellowish-red solution, which has the taste and smell of the extract. It forms a similar-looking solution in alcohol and pyroxylic spirit, in both of which it is very soluble. It is comparatively insoluble in ether and chloroform. It is very deliquescent; so that if atmospheric air is accessible to it, it remains in a semifluid state. It can be preserved in this form, but not in a state of solution in water. The solutions in spirit of wine and pyroxylic spirit keep

well. Cystine, like the preceding principle, is remarkable in not producing any very characteristic reactions with other vegetable and mineral substances. When added to a solution of sulphate of copper in water and sulphuric acid, it also, like laburnine, strikes a green colour, but of a shade quite different from that produced by the latter, being a much deeper green. It gives, with the compound liquor of iodine, a dark-reddish gelatinous deposit, which soon collects into one mass. This reaction is very well seen on a porcelain vessel. When it is added to a solution of the subacetate of lead, we obtain after a time a brownish sediment. Tannin gives with it a slightly yellowish precipitate. There is a faint haze on the addition of a solution of chloride of barium.

Characters of Laburnic Acid.—The solution obtained after driving off the sulphuretted hydrogen has a yellowish colour, which, as the solution is being slowly concentrated, gradually changes to a red tint, which becomes darker, until at last a semi-solid dark-reddish extract is obtained. It readily reddens litmus paper, and has an agreeably acid taste. Some medical authors have said that the acid reaction of the decoction may be owing to the presence of gallic acid. This is a mistake; for, although it may in some respects resemble this acid, it has characters and properties sufficient to prove that it is essentially different. It does not strike a bluish-red colour with the persalts of iron; for, when we carefully examine this reaction, the colour produced will be found to be of a reddish-brown hue. It gives a reddish-yellow deposit with the proto-sulphate of iron. When mixed with a solution of caustic potash it does not darken in colour, but gradually becomes redder until it approaches a blood-red tint, and, at the same time, deposits a sediment of a similar colour. The solution, when evaporated, either spontaneously or by the aid of a gentle heat, yields a deposit which is quite uncrystallizable. I have also evaporated it in vacuo, and examined the sediment under the microscope, but could detect no tendency to crystallize. It gives a greyish-white precipitate with the acetate of lead, a yellowish precipitate with the iodide of lead, and causes a yellowish gelatinous precipitate when added to the subacetate of lead. It gives a pale-brown precipitate with the perchloride of antimony, and, when heated with the bichromate of potash, produces a sherry-red colour, which becomes much more intense after the addition of a little sulphuric acid. It gives, with nitrate of potash, to which a little sulphuric acid has been added, a lively yellow colour; with the chlorate of potash an orange-yellow colour, which, on the addition of sulphuric acid, assumes a greenish-yellow hue; but no precipitate with the chloride of barium.

I have now given an analysis of the laburnum, and described the action of its principles with those mineral and vegetable reagents which produce any marked changes when brought in contact with them. I shall now give the principal reasons which lead me to conclude that these principles which I have described are dis-

tinct and different from each other, and not one principle in different combinations. I have already stated that the decoction reddens litmus paper, and must therefore contain an acid. This acid which is present precipitates the solution of acetate of lead in water. The substance which I have extracted and called laburnic acid has the same reaction. Its acidity cannot be said to be owing to some acetic acid remaining in the precipitate after filtration; for I have taken special care that all the fluid portion which can be removed from the precipitate produced by the acetate of lead is separated by pressure. Moreover, any that could possibly remain must be evaporated by the heat employed in bringing it to the consistence of an extract. The care which I have taken to remove the acid must also, at the same time, lead to the full separation of the other two principles which are not precipitated by the acetate of lead, and consequently remain in solution. The result is, that this acid, which has chemical reactions altogether different from the other two principles, as already mentioned in the description of this substance, has such a powerful action on the human system, that three grains of it will produce a very distinct soporific action, if given to an adult. It is rather remarkable to find an organic acid having pure narcotic properties; but we find that oxalic acid sometimes acts as a narcotic; and as our knowledge of the actions of the various organic acids becomes more extended, we may find others with similar properties. I consider, therefore, from the chemical and physical properties of this substance, and the care which has been taken in the analysis to avoid all fallacies, that I am entitled to conclude that it is an acid, and quite different from either of the other two principles, which I shall now endeavour to show are also distinct from each other.

Laburnine is comparatively insoluble in pyroxylic spirit, while cystine is readily soluble in this fluid. The former is a dark-greyish powder, not deliquescent, with a slightly nauseous taste. Cystine is a dark-red deliquescent substance, intensely bitter, with an odour resembling that of tobacco; it causes sleep in doses of from one to four grains, and tends to act as a gentle aperient. Laburnine acts as a soporific in doses of from five to twelve grains, and slightly constipates the bowels. These characters, along with the others mentioned in the preceding pages, lead me to conclude that they are two distinct principles. I have tried many ways to get them into a crystalline form, but in no case have I been successful. It is a remarkable fact, that this difficulty presents itself in the analysis of many of the other plants in the natural order Leguminosæ, and in the case of senna the most eminent chemists have been baffled.

Distilled water, although the best solvent for extracting the principles of the laburnum, has not the power of preserving them for any length of time. The decoction, when kept for a week or two, loses its original colour, assumes a whitish-green hue, and

soon emits a disagreeable odour. It also at the same time deposits a gelatinous-looking substance, and generates a gas which, on examination, I have found to be carbonic acid. This most probably arises from the supervention of some form of fermentation. The decoction may be kept for a much longer period by the addition of a little sugar, which at the same time serves to conceal the disagreeable nauseous taste of this preparation. A greater quantity of carbonic acid is given off after the addition of the sugar, so that the vessel which contains the fluid requires to be very tightly corked. The solutions of the individual principles in water do not keep for any lengthened period. The solution of the acid may, however, be preserved in this form for a considerable time. Tinctures formed by dissolving cystine or laburnic acid in proof spirit, form elegant preparations which do not undergo decomposition. Laburnine is too insoluble in proof spirit to form a tincture. Cystine forms a beautifully claret-coloured solution when dissolved in pyroxylic spirit; and this preparation is very valuable, since it combines the calmative and anodyne properties of the former with the direct sedative action of the latter. The extract formed by evaporating the decoction of the laburnum keeps well, and may be administered in the form of pill. If exposed to the atmosphere, it retains a very slight degree of softness, arising from the deliquescent property of the cystine. Laburnine is best preserved in the form of powder. Cystine, on account of its deliquescence, retains a soft consistence, and can be readily made into pills with the conserve of roses or bread-crumbs, which can be kept, without becoming too hard, for any length of time.

Modes of Administration and Doses of Laburnum, and its Principles.

—The decoction of laburnum concentrated until it attains a specific gravity of 1024, may be administered in doses of from two to forty minims, frequently repeated according to the age and constitution of the patient.

The dose of the extract of laburnum should vary from one-tenth of a grain to two grains.

Cystine may be given in doses of from half a grain to four grains. A tincture may be formed by dissolving thirteen drachms of this principle in a pint of proof spirit. The dose of this preparation will be five minims to a drachm, according to the age of the patient.

Laburnic acid may be given in doses of from one to six grains. It may be prescribed in the form of pill, or dissolved in water; or a tincture may be formed by dissolving two and a quarter ounces in a pint of proof spirit, and given in doses of from twelve minims to a drachm.

Laburnine should be given in doses of from five to twelve grains.

If cystine is to be given dissolved in pyroxylic spirit, four drachms of the former should be dissolved in two ounces of the latter, and given in doses of from three to twenty minims. The

disagreeable taste may be easily removed, as the various preparations which are usually employed for this purpose may be added to those vehicles.

- *Physiological Action of the Laburnum on the lower Animals.*—I shall first make a few remarks upon the action of the crude drug on the cat.

The decoction of laburnum when administered to the cat is not always uniform in its action. This, I consider, is due to a variation in the proportion of the principles present in the different preparations employed. The result also is modified according to the channel by which it is introduced into the system. When a moderate dose is introduced into the stomach by the catheter, the animal in a few minutes moves about, and shows considerable uneasiness. It soon afterwards begins to move its tongue and jaws, and then to retch and vomit. It seldom vomits more than once or twice when the solution has been introduced into the stomach. These symptoms are followed by languor and depression, and not unfrequently by suffusion of the eyes and sleep. This state of depression continues about an hour or two, and then passes off, leaving the animal apparently quite well. It is impossible to kill the animal by introducing this poison into the stomach, unless we put a ligature on the œsophagus to prevent its ejection from the stomach. The symptoms, when the ligature is applied, are the same as those produced by a large dose introduced into the system by the subcutaneous cellular tissue, serous cavity, or into the veins. The action on the pupils varies. They are sometimes contracted, and not unfrequently dilated; in which case they readily contract on exposure to a strong light. The respiratory movements are in the early stage considerably accelerated, but after a time fall to the normal standard. The heart's action is also at first increased in rapidity. The sleep, when the poison is ejected from the system by vomiting, never passes into coma, and the animal can be easily awakened. The appetite and digestion do not seem to be in the least impaired, even when the animal is experimented on in this way during several successive days; and if the experiments are frequently repeated, large doses being given, there occur during this period frequent green alvine evacuations. When the animal is at last killed by the poison being injected in large quantity into the cellular tissue or a serous cavity, we do not find any trace of congestion or inflammation in the stomach. I have occasionally seen a faint discoloration in some parts, but nothing that could not be easily accounted for as being the effect of vomiting. When very small quantities of the poison are mixed with the food, vomiting may not take place, but the animal will soon fall asleep, and continue so for some time. When the drug is introduced into the subcutaneous cellular tissue, vomiting is more certain than when the substance is introduced into the stomach; and when the dose is small,

the symptoms are similar to those already mentioned, with this difference, that the subsequent hypnotic effect is much more marked. These symptoms, however, soon pass off without causing the animal any permanent injury. The solution, when injected beneath the skin, if it does not cause death, becomes slowly absorbed without producing any inflammation or suppuration. Care must, however, be taken that the carefully filtered solution is alone injected, so that there can be no solid matter which will act as a foreign body. This proves that the principles of the laburnum are not irritant. Similar experiments may be made on the same animal from day to day without impairing the functions of its digestive system, and without producing any other effect than the usual symptoms which it presents when under the influence of the drug, shortly after its administration. The rapidity with which recovery takes place is very remarkable, even although a large part of the fluid remains unabsorbed in the part injected. It would seem that the power of absorption in the part is more or less impaired and modified in a short time after the injection. Shivering and slight spasm are symptoms which are sometimes present. Salivation may also be produced, and not unfrequently a marked diuresis. I have also noticed that in many of the experiments there is seemingly produced a feeling of itching, as the animals scratch themselves in various parts. The substance acts in the same way when it is introduced into the system by the rectum, or by injection into a serous cavity. When fatal doses are administered by injection beneath the skin, the ordinary symptoms become more intense, and the respiration soon stops. The action of the heart continues for some minutes longer; and we find, on examining the body of the animal, the venous system and right cavities of the heart engorged with dark blood, the lungs collapsed, and the left ventricle usually contracted, but no signs of inflammation in any part of the body.

Action of Cystine.—This substance, when introduced into the stomach in small doses, produces increased rapidity of the heart's action and acceleration of the respiratory movements. The breathing in a short time becomes slower, deeper, and more prolonged, and the animal falls asleep. The eyes are suffused, and the pupils slightly dilated. After a time, when frequently administered to the same animal, it produces a slight aperient action. These symptoms usually commence in about a quarter of an hour subsequent to the administration of the drug. If we administer it in the form of pill, sweetened with something to conceal its bitter taste, vomiting is not so apt to supervene. The solution is more apt to cause vomiting, especially if, while being administered, the fluid comes in contact with the mucous membrane of the mouth. The same symptoms follow its administration when introduced into the system by the other channels. When large doses are given, the symptoms already mentioned are preceded by movements of the jaws and tongue, slight retching and vomiting, which usually

commence in about ten minutes, but do not again recur while the animal is under the influence of the poison. The animal rapidly recovers, and its appetite is rather increased than impaired. When fatal doses are injected into the peritoneal cavity, the usual narcotic symptoms are produced, and the pupils are usually much dilated. Suspension of the respiratory movements precedes that of the heart's action, as in the case of the crude drug; and the post-mortem appearances are exactly similar. Small doses frequently administered to the same animal excite a ravenous appetite for food. Five to eight grains of this substance injected into the peritoneal cavity are required to kill an ordinary-sized cat. We frequently see slightly spasmodic muscular twitches after such large doses. The posterior extremities are the first to become paralyzed. The aperient action of this substance is very slight, and the alvine evacuations have a greenish colour. It produces a slight diuresis. A solution of it, when dropped into the eye of the animal, causes in a short period slight dilatation of the pupils. It does not produce inflammation in the tissues with which it is brought in contact.

Action of Laburnine.—This substance, when injected in moderate doses into the stomach of the cat, produces in about twenty minutes symptoms of drowsiness. The eyes become watery, and there is a temporary excitement of the heart's action and of the respiration. The pupils become slightly dilated, and the animal falls into a state of sleep, from which it can be easily awakened by any external irritation. It soon recovers and appears quite well. This substance, when injected into the cellular tissue, is slowly absorbed, and during this period the animal appears languid, depressed, and sleepy. The symptoms of drowsiness may or may not be preceded by retching and vomiting. The animal, while in the state of depression during the absorption of the poison, shows little desire for food. Laburnine does not produce inflammation or suppuration in the tissues into which it is injected. I have injected a solution of five grains into the peritoneal cavity of a cat, which, without showing any symptoms of pain or inflammation, got quite well in a day or two. Such an experiment may be followed by purging; but I attribute this result to the mere pressure of the fluid in the cavity stimulating and exciting the vermicular action of the intestines. This result does not follow the introduction of similar doses into the system by other channels. Such doses generally give rise to diuresis, which continues during the absorption of the fluid. The poison during this period is most probably being eliminated from the system by the kidneys. Very large doses of this substance are required to cause death: small doses will, however, readily give rise to languor and sleep. In one animal which I succeeded in killing, by administering large doses frequently repeated, I found the post-mortem appearances to be such as are caused by a narcotic, and similar to those produced by the crude

drug. The left ventricle was, however, not firmly contracted, but flabby, and contained some dark-coloured blood.

Laburnic Acid.—This substance has also narcotic properties, and the symptoms which it produces are closely analogous to those which follow the administration of the other two principles. When administered in solution, it is apt to cause vomiting and to be ejected from the system. When introduced into the cellular tissue, or into the peritoneal cavity, so that it cannot be ejected by vomiting, the action of the heart and respiratory muscles becomes accelerated, and retching, followed by vomiting, supervenes. These are succeeded by symptoms of drowsiness. The breathing becomes slower, deeper, and more prolonged, the eyes are suffused, the pupils usually contracted, and the animal falls asleep. We also observe slight muscular spasms while the animal, more especially if it is a young one, is labouring under the hypnotic action of the drug. It does not produce purging, unless it is administered frequently to the same animal during several consecutive days, and even then the aperient action is slight. It, like the other two, requires to be given in large doses to cause death. When it is administered in fatal doses, the ordinary symptoms are followed by loss of muscular power in the posterior extremities, and paralysis of the respiratory muscles. When the body of the animal is opened immediately after the stoppage of the respiration, the heart is found to be still contracting, and the lungs are lying in the back part of the thoracic cavity, white and collapsed. The cardiac contractions continue for ten or fifteen minutes, the left ventricle being the first and the right auricle the last to stop. The pulmonary arteries and veins and the rest of the venous system are engorged with dark blood. Venous blood is also present in both right and left auricles and ventricles. On cutting into and compressing the lung, a frothy matter, but very little blood, can be squeezed out. Frothy mucus is present in the upper part of the windpipe. The bladder is usually distended with urine; but no indications of inflammation are met with.

(To be continued.)

ARTICLE IV.—On *Cancrum Oris*. By ALEXANDER KEILLER, M.D., F.R.C.P.E., Physician to the Sick Children's Hospital; late Senior Ordinary Physician to the Royal Infirmary.

Read before the Medico-Chirurgical Society, 5th March 1862.

THE occurrence of *gangrene* at an early age, or, indeed, at any period of life, or in any region of the body, always constitutes a formidable variety or complication of disease; and it may be truly

said that the peculiar form of mortification which is occasionally found to attack the mouth and face of children, is not only one of the most destructive, but one of the most, if not *the* most, dreadful-looking morbid actions to which they are liable.

Having had the opportunity of witnessing a few well-marked instances of this comparatively rare, and most deadly affection, and having recently seen a fatal case, and also one or two of a milder type, I have been induced to bring the subject before this Society, with the view of eliciting information regarding it. In doing so, I shall first notice some of the cases in the order in which they presented themselves, and then very briefly refer to one or two points connected with them.

CASE 1.—The first case of the fatal form of this disease which I witnessed, was that of an apparently healthy enough child about four years old, whom I had for several weeks attended during an attack of ordinary infantile remittent fever.

The right cheek was the one affected: it became at first swollen, and although œdematous-looking did not pit on pressure but felt tumid and resisting; the right eyelids, however, were somewhat œdematous. In two or three days after the swelling was first noticed, the cheek felt harder on external pressure, and its surface had an oily or glazed appearance, while a slight blush of redness gradually presented itself over its most prominent point. On looking into the mouth, the tongue seemed swollen and coated along its right edge, the corresponding gums were loose and detached from the teeth, and the buccal surface of the cheek presented a large grey-coloured slough, which, with the peculiarly foetid odour of the breath, and the copious flow of saliva, sufficiently indicated the gangrenous nature of the case.

By the advice of the late Dr William Campbell (the case having occurred during my advanced student days, now more than twenty-five years ago), muriatic acid lotion was applied to the affected surface, and quinine, with wine and nutritious diet, was ordered. No improvement, however, took place from this too mild treatment, and the disease in a very few days afterwards had involved the upper lip, the right side of the nose, and the whole cheek and lower eyelid, which to a considerable extent sloughed off like a dirty poultice, exposing to view the interior of the mouth: the teeth and the denuded alveoli were indistinctly seen, being covered with a layer of putrid, ash-coloured, and most offensive secretion. The boy died soon after the dropping off of this horrible-looking slough; and I well remember the hopes entertained of his recovery when this took place, more especially as he about the same time seemed to revive considerably, being able and apparently willing to swallow what was poured into his sadly-disfigured mouth. No minute post-mortem examination was allowed.

At the time of the occurrence of this case, when our days (and nights, too, often enough) were spent in endeavouring to ward off

disease and death in the Canongate district, rubeola, variola, and other epidemic diseases were excessively prevalent and very fatal.

CASES 2 & 3.—In the course of the seven years (between 1836 and 1844) during which I practised in Dundee, I witnessed two cases of cancrum oris, both of which terminated fatally, and which ran a very similar course; in each instance the patient was a child about eight years of age, and, singularly enough, both cases occurred in the *Overgate*, which is only a somewhat improved edition of the Canongate or Cowgate of Edinburgh.

In the one case, after a comparatively mild attack of rubeola, which, however, left a considerable degree of weakness, accompanied with want of appetite, a pasty-white condition of the tongue, and a pallid and slightly œdematous appearance of the face, the child became feverish, heated, very restless and irritable, though at the same time drowsily inclined; the mouth and gums were hot and swollen. One or two minute doses of hydrargyrum cum creta were given at this stage of the symptoms; and this treatment (as has not unfrequently been the case under such circumstances) afterwards created great uneasiness in the minds of the parents, as the idea was suggested to them that the disease was possibly kindled up by the minute doses of mercury properly enough administered to their child, who unfortunately died from gangrene of the mouth and face very shortly after the attack mentioned.

This case, in its progress and termination, was (like the other which also occurred about the same time, and in the same immediate locality) exceedingly similar to the one which recently died in the Sick Children's Hospital. The disease commenced within the mouth, and attacked the right cheek, which, with a large portion of the upper lip, became in a very few days irremediably destroyed by gangrenous erosion.

In both the Dundee cases the gums and alveolar processes of the right upper jaw, and of part of the lower jaw of the same side, were deeply involved, the teeth soon dropped out, and from the extensive and black gangrenous mass there issued a most intolerable foetor. In spite of the assiduous adoption of the usual tonic treatment, the phagedena continued to extend until the nose and lower lip were also partially destroyed. The sloughs did not separate before death, which took place without much apparent suffering about a fortnight after the appearance of the first symptom.

CASE 4.—The next case I saw was a very interesting one, seeing that perfect recovery took place after extensive loss of tissue by gangrenous action.

In this case *scarlatina* was the pre-existing disease: the child was only two years old, and the local affection at first resembled *noma* rather than *cancrum oris*, that is, *ulcerative* rather than *gangrenous stomatitis*.

The *left* cheek was the one specially affected in this case, and the recovery was in all probability due to the activity of the treat-

ment which was had recourse to before the slough commenced to separate; for it was not until after several applications of the strong mineral acids that the salivation and disagreeable fœtor diminished, or the progress of the spreading ulceration became arrested. The acid applications were (with difficulty, and not without apparent danger) made to the affected structures in the mouth, and especially to the inner and sloughy mucous surface of the cheek, which, although deeply and as if irrecoverably affected, afterwards exhibited a line of demarcation between the gangrenous and the surrounding tissue. In about three days after the line of arrestment appeared, the dark, sloughy-looking eschar separated, and was slowly followed by reparative granulation, which ultimately, though imperfectly, filled up the horrible-looking gap.

An abstract of the particulars of this case which occurred in the Pleasance was published a number of years ago, along with notes of an equally remarkable case which occurred in the practice of a late intimate friend and brother-practitioner in Dundee, the now deceased Dr Paton.¹

These were all the examples of *gangrenous stomatitis* or *true cancrum oris* which I had until lately witnessed; and, considering the great rarity of this very fatal form of disease, it is odd enough, perhaps, that I had seen so many. In proof of its *rarity*, I may state that Dr West has only observed *seven cases* of it out of upwards of 30,000 children's cases, although some writers, whose imagination seems to interfere with their accuracy of observation, appear to see the disease where it does not exist, and would have us to believe that in their practice it is not by any means uncommon.

The following are the cases (five in number), the occurrence of which has induced me to draw up this communication:—

I shall here cite them as noted by Dr Linton, house-surgeon to the Sick Children's Hospital.

CASE 1.—Mary F—; age, 3 years; admitted 6th September 1861.

History before admission.—The child is described by her mother as having been strong and healthy, until about three weeks since, when she was attacked with measles. The eruption came out tolerably well, continued out the usual time, and then disappeared without the occurrence of any special symptom. In the course of a day or two, however, after the disappearance of the rash, the child's mouth began to be sore, and in a few days, seeing that the disease was extending, the mother applied to the student who had previously been in attendance, when he prescribed an alum-gargle. The condition of the mouth would appear to have made very slow progress; so that little uneasiness was felt by the parents, until, on the morning of the 5th September, a blister, about three-quarters of an inch in length, by half an inch in breadth, with an irregular margin of a dirty grey colour, and extending upwards and outwards, appeared about the right angle of the mouth. It continued in this condition until late that evening, or early next morning, when it rapidly assumed a dark brown and then a coal-black colour, and had a flattened appearance. Since the mouth began to be sore, the breath has been fœtid, and there has been salivation, both of which symptoms have increased considerably within the last few days. The bowels have been in a very loose state for some time.

¹ Monthly Medical Journal, June 1848, p. 888.

Symptoms on admission.—Patient is a stout, well-proportioned child, with round, rather pale face, and light hair and eyelashes. Externally the right cheek is slightly swollen, and there is little or no redness or hardness about it. At the right angle of the mouth, there is an irregular blackened and depressed surface, with an abrupt margin, and having the appearance of being superficial. On opening the mouth, the inside of the cheek presents an ash-grey appearance, which extends throughout its entire length, and the external gums, corresponding to the right upper molar teeth, are ulcerated and sloughy. There is salivation,—the saliva being fluid and of the usual colour. The odour of the breath is fœtid. The surface of the body is hot, the pulse high, and the bowels very loose. The patient eats and drinks well, and has no difficulty in swallowing. Ordered a drachm of chlorate of potash to be dissolved in a pint of water and drank in twenty-four hours.

7th September.—Passed a restless night; bowels continue loose. The blackened surface has extended very slightly, and nearly equally in all directions; the tendency being to spread more towards the upper lip than elsewhere. The factor of the breath is on the increase. She was ordered to continue the chlorate of potash, to have five-drop doses of the tincture of the muriate of iron every two or three hours, a teaspoonful of sherry occasionally, and the blackened portion of the cheek to be painted with the solution of the perchloride of iron two or three times in the course of the day.

10th.—During the last three days the gangrene has gradually spread, and now involves about one-third of the upper lip on the right side, and has extended slightly across the cheek, and upwards and inwards towards the eye and nose, while on the lower lip it has remained nearly stationary. Since last evening there has been an attempt at separation of the gangrenous from the healthy part. Some of the teeth on the right side have become loose. About twelve o'clock, Dr Keiller applied the strong hydrochloric acid externally to the entire blackened portions of the cheek and lips, and internally to the whole of the diseased surface on the inside of the cheek and lips, as also to the whole of the right side of the alveolar process of the upper jaw. The painting with the solution of the perchloride of iron, as well as the internal use of the chlorate of potash, was ordered to be discontinued; the external diseased part was directed to be painted over with Condy's disinfectant fluid; the wine and tincture of the muriate of iron to be continued; and a teaspoonful of chlorine water to be administered every two hours.

From this time the disease gradually extended, until it had destroyed the soft parts of the right side of the face, and the child sank and died on the evening of the 18th September.

It is worthy of remark, that throughout the entire progress of the disease the patient never once complained of pain, notwithstanding the great extent of texture destroyed, and that she continued in the possession of all her faculties, up to within a very short time of her death.

No post-mortem examination was allowed, but it could be seen that the alveolar process of the upper jaw was completely destroyed, from the last molar tooth of the right side along to the canine of the left; the remaining teeth throughout this extent being more or less loose. The disease had slightly encroached on the margin of the hard palate alongside of the teeth, in that portion of the alveolar process mentioned above; the part most destroyed corresponding to the molar teeth. The alveolar processes of the right side of the lower jaw were comparatively little destroyed. The bones of the nose to a greater or less extent had participated in the surrounding disease. The inside of the cheek was one entire putrid mass of a brownish colour, and of a spongy consistence; the soft palate was healthy.

CASE 2.—Christina M—; age, 8 years; admitted 22d October 1861.

History before admission.—Patient has never been a very strong child. For years she has been much subject to attacks of bronchitis, which, although usually assuming at the outset more or less acuteness, have manifested a tendency to

degenerate into the persistent chronic form of the disease. She had seemed to be in her usual good health until about ten days since, when she began to complain of soreness in her mouth, which, on examination, was observed to be ulcerated on the inside of the left cheek. The odour of the breath was noticed to be increasingly fetid; there was but little difficulty in swallowing. No account could be obtained of the patient having had any fever lately.

Symptoms on admission.—Patient is a thin, delicate-looking girl, with pallid complexion, and having the strumous temperament pretty well marked in her features.

The left cheek is swollen as if from an ordinary gum-boil; its external surface being slightly tense but soft. There is no discoloration, neither is there any hardness, except when pressure is employed, when the induration seems slight and deep-seated; there is no pain except when the part is pressed.

On looking into the interior of the mouth, the left side of the soft palate, extending to about three lines from the mesial line, and measuring about the size of a shilling, is seen to be ulcerated, the ulceration being covered by a thick layer of pus. On the inside, and about the middle and back part of the left cheek, there is a sloughy patch, with a ragged irregular margin, about the size of half-a-crown; while on the inner and left side of the upper lip, and extending to the angle of the mouth, is a smaller patch about the size of a bean.

The gums externally are spongy, from the back part of the left side of the jaw along to the molars on the right side, while internally this condition exists on the left side no farther than to the left canine. The teeth of the upper jaw on the left side, from the last molar to the canine, are exposed to their fangs, and are very much discoloured. The inner side of the lower gum on the left side is comparatively healthy, but the outer side is vascular and sloughy up to the mesial line.

There is considerable salivation, the saliva being fluid and somewhat discoloured. The odour of the breath is very fetid; the eyelids slightly puffy; there is no ulceration of the tongue. Patient has a troublesome cough, with but little expectoration; her appetite is good, and she swallows with little apparent difficulty. On percussion there is nothing abnormal either in chest or abdomen, but on auscultation of the former, sibilations and mucous râles are heard over the entire right side, and over the left except at the apex. The bowels are rather costive.

Immediately on her admission, Dr Keiller, after having put her under the influence of chloroform, applied the strong nitric acid to the whole of the diseased and gangrenous looking portions of the interior of the mouth, and to counteract the effects of the acid on the healthy textures an alkaline solution was employed. She was ordered to take five-drop doses of the tincture of the muriate of iron every three hours, to have a little wine, and to take two drachms of chlorate of potash, dissolved in a pint of water, in the course of twenty-four hours.

23d October.—Passed a favourable night, having slept well. The skin is dry and the pulse 96. The breath is less fetid, and the salivation is much diminished. The gangrenous patches look cleaner and much more healthy. None of the healthy texture would appear to have been affected by the acid.

1st November.—Since last report patient has been progressing favourably. The ulcerated portions of the mouth have diminished considerably in size, and have a more healthy appearance. There is no pain in the cheek, no salivation, no fetor of breath, no difficulty in swallowing, and the cough is almost altogether gone. A few days since a gargle of borax in water was ordered; and to-day the sores in the mouth were touched with the nitrate of silver; this treatment to be followed every alternate day.

7th.—The mouth is now altogether well; the sore on the middle of the cheek, which was the last in healing, looking slightly irritable.

13th.—The borax lotion ordered to be repeated, on account of the irritable character of the ulceration on the cheek. Since last report, the cheek has been poulticed on account of the swelling, which, though sensibly diminished, was still considerable. It is still a little swollen.

CASE 3.—Catherine W—; age, 6; 8th November 1861.

Patient has enjoyed tolerably good health, though occasionally subject to attacks of bronchitis, assuming more or less of a chronic character. About three weeks since, the parents noticed that there was considerable salivation, that the odour of her breath was foetid, and that the left cheek was slightly swollen. It was not till a few days after the above symptoms had manifested themselves that the patient began to complain of pain in the mouth, and then principally during mastication; she then became very uneasy and restless at night. On looking into the mouth the left cheek on the inside and towards the back part is seen to be ulcerated and sloughy, and of a dirty greyish hue, in a space about the size of half-a-crown. The gums, both upper and lower, on the same side, from about the last molar to the mesial line, are vascular and tender, bleeding on the slightest touch. On applying at the dispensary she received some powders of chlorate of potash; one drachm to be taken each day, and five drops of the tincture of the muriate of iron every two or three hours.

24th.—Patient took the above medicines for about ten days, and is now almost quite well. The cheek is not now swollen; the odour of the breath is normal; there is no salivation, and the sore on the inside of the cheek is whole, though still looking slightly raw.

CASE 4.—Jane R—; age, 5½; applied at the dispensary, 26th Nov. 1861.

Patient has a very decidedly strumous aspect; hair dark,—eyelashes thick and long; otherwise she is a fine child, and enjoyed good health until about three weeks since, when she had a rather smart attack of measles. During the eruptive stage of the disease, and subsequently, while coughing, a considerable quantity of mucus, tinged with blood, was repeatedly spat up,—the blood evidently coming from the interior of the mouth. The blood in all probability proceeded from the gums, which, according to the mother's account, were swollen and spongy. A cough mixture was all the medicine she received, either during the attack or since. The cough has now nearly disappeared.

26th November 1861.—On applying to-day for advice regarding the mouth, the right cheek is seen to be slightly affected, being swollen, but not tense externally, and the sub-maxillary gland is somewhat enlarged. On the other side the cheek and gland are normal. On opening the mouth a yellowish-coloured ulceration occupies the internal surface of the cheek, extending from its back part forwards, to the right lateral incisor. When the teeth are closed this band of ulceration lies in contact with the outer surfaces of the teeth of both jaws, and the measurement consequently corresponds with these surfaces. The ulceration, which is superficial and has an irregularly granulating surface, is about two inches in length, and has slightly elevated margins, around which there is a dark red inflammatory blush. The gum of the upper jaw, from the back part forwards round to the left lateral incisor, is swollen and slightly ulcerated, and bleeds on the slightest pressure. The lower gum is also affected, but in a less degree,—bleeding on pressure, but having no appearance of ulceration. The opposite cheek and portions of the gum and mouth, though somewhat pale, are unaffected. The breath, according to the mother's statement, is foetid and offensive. There is slight salivation, which is colourless. The tongue, palate, and inside of the gums, are normal. *Ordered* five drops of the tincture of the muriate of iron every two or three hours in water, and a drachm of chlorate of potash daily. The ulceration was touched with Condyl's disinfectant fluid.

27th.—The ulceration seems somewhat better—being diminished in breadth, and the surrounding inflammatory redness less. Treatment to be continued, and Condyl's fluid reapplied.

29th.—The mouth is still improving; the ulceration is less, the yellowish coating greatly removed, and healthy granulations are more perceptible. Treatment to be continued, and the part painted with Condyl's solution.

2d December.—The mouth is now almost well; the yellow coating of the

ulceration has disappeared, and healthy granulations have taken its place; the sore merely appears raw.

CASE 5.—Andrew A.—; age, 7; admitted 26th November 1861.

Patient, though having some of the characters of the strumous diathesis, appears to be a healthy child. He has never been very strong, and has had frequent attacks of various ailments. A short time before admission he began to complain of pain in the tongue and mouth, especially during mastication. On examining the mouth the tongue is found to be covered with a thick white coating over its posterior three-fourth, while at its point there are about six small aphthous spots of ulceration. On the inside of lower lip and about the left angle of the mouth are several small excavated ulcerations, having a yellow surface. In the upper jaw the part of the gum corresponding to the upper incisor is sloughy, and from that round to the first molar on the right side the gum is swollen, vascular, and so tender, that it bleeds on the slightest pressure. Rest of the mouth healthy.

Ordered potass. chlor. ʒi. dissolved in water daily; tinct. mur. ferri, five drops every two or three hours.

7th December.—Patient discharged cured.

Case 1 affords a well marked illustration of cancrum oris in its worst and most fatal form; case 2 the same disease in a slighter and more curable degree; whereas cases 3, 4, and 5 are good instances of ulcerative stomatitis.

It does not appear to me to be necessary or proper to occupy any more of the time of the Society on the present occasion by making remarks on the individual cases I have quoted as illustrative of the disease in question. Had time permitted, however, I might have ventured to discuss several points worthy of attention, such as the distinctive characteristics and special modes of management not only of the various kinds, but of the various degrees of inflammatory diseases of the mouth in children. We know that children are exceedingly liable to affections of the mouth and throat even from the earliest infancy to childhood or youth,—that although these are often very simple and easily removed, yet they are often severe and tedious, occasionally very serious, in consequence of extension to the throat or air-passages; sometimes fatal, although apparently local, as in the more dangerous form of stomatitis, of which I have just given a few marked examples.

As it is of the utmost importance to distinguish the *varieties* of stomatitis usually referred to by practical observers, I may here, in a word or two, refer to them; they are only three in number, namely:—

I. *Follicular or Aphthous Stomatitis*, in which merely the mucous membrane and the follicles are involved; a comparatively simple, and seldom serious affection, characterized by the appearance of aphthæ or minute ulcerations, and, although occasionally idiopathic, very generally concomitant with, or secondary to, some gastric or intestinal disease.

II. *Ulcerative Stomatitis or Noma*, in which we have a slow *ulcerative* process affecting the gums, which, although often severe and extensive, seldom or never terminates in gangrene; the disease

being, moreover, quite curable by less severe measures than those required to stay gangrenous action.

This form of stomatitis ought especially to be distinguished from the fatal variety in question, as their treatment differs materially. The one is of comparatively frequent occurrence, and is comparatively easily removed,—chlorate of potash alone being considered by many as a perfect specific in this variety; whereas that remedy seems to have little effect on the gangrenous form, which is of very rare occurrence, and can with the greatest difficulty be prevented from running its fatal course.

III. *Gangrenous stomatitis*, or *cancrum oris*, as its name implies, is distinguished by this very essential difference, that it is truly *gangrene*, and not merely *ulceration*, like *noma*; it is a true *mortification of the cheek tissues*, spreads very rapidly, and is *almost always* fatal.

I have spoken of its *rarity*, and as to its *fatality*, proofs are abundant.

West had 6 deaths in 7 cases.

Rilliet and Barthez had 20 deaths in 21 cases.

Tourdes found 176 deaths in 239 cases collected, or 75 *per cent*.

It is evidently a disease peculiar to childhood. It is more frequently met with between the ages of 2 and 5, than either before or after that period.

Of West's cases, 2 were between 2 and 3; 2 at 3; 1 between 4 and 5; 1 at $6\frac{1}{4}$; and 1 at 8.

According to Rilliet and Barthez, of 29 cases, 19 occurred between 2 and 5; 10 between 6 and 12.

Tourdes found, of 102 cases between $1\frac{1}{2}$ and 12 years, the greatest number between the 3d and 4th years.

Several questions remain to be briefly noticed regarding this disease besides its rarity and fatality, or the age at which it most frequently appears. There is, for example, the character of the disease with which it is more directly associated, and the important but more difficult question as to its individual nature or actual pathology. Is it a *local* affection, or a general or *blood* disease? The fact of it seldom or never occurring idiopathically, but generally after debilitating or blood-changing disease, would indicate that it is the result of a poisoning of the blood. Rilliet and Barthez give only 1 out of their 29 cases as occurring idiopathically; all the others were after some debilitating fever or disease; 12 were after measles. In Dr West's 7 cases, 2 were after typhoid fever, 3 after measles, 1 after ague, 1 in a case of struma.

From the history of the cases which I have reported, and indeed of almost all the cases noted by various practitioners, it seems clear that it never appears in a purely idiopathic form, but is almost always concomitant with, or rather subsequent to, some long-continued, debilitating, or morbid influence occurring in childhood. As in the other but milder form of stomatitis referred to, the morbid

condition of the mucous lining of the mouth (in which the disease is generally at first noticed) is evidently symptomatic of it may be distant functional or structural derangement, or pre-existing disease, the local oral symptoms usually appearing in the advanced stage, or rather during the period of apparent convalescence, from some more or less acute form of disease. Cancrum oris, for example, most frequently appears in strumous children after an attack of one or other of the eruptive fevers, especially after measles, but occasionally occurs in the course of or after simple continued fever, or even some less general inflammatory action of a low type. While the strumous diathesis doubtless tends to render rubecula and similar diseases more likely to be followed by this peculiar phagedenic ulceration and sloughing, there can be little doubt but that an impure atmosphere and unhealthy locality have to do with its commencement as well as with its progress. As proof of this otherwise obvious enough source of mischief, there is the fact that this loathsome, though comparatively rare sequela of pre-existing disease is very generally, if not exclusively, confined to the offspring of the poor; so that while the common diseases of childhood (more especially the exanthematous and remittent fevers) would seem to constitute the immediate or ordinary exciting cause, there can be no question as to the predisposing influences of the usual concomitants of poverty, *deficient nutrition*, and, above all, that most debilitating and poisoning inheritance of the neglected poor, *impure air*; both of which, together with previous debilitating disorders, very materially tend to engender that pale unhealthy aspect which the subjects in question usually present.

It has been noticed that cases of this kind are more frequent and more severe at certain seasons when depressing epidemics appear, and in certain localities where atmospheric and other impurities exist. The localities which provided the nine cases I have just reported, are well known for their extreme insalubrity; for example, 2 came from the Canongate, 4 from the Cowgate, 1 from the Pleasance, and the 2 Dundee cases occurred in the Overgate, all tending to prove that unhealthy and poor localities predispose to the disease. This is only what might be looked for; and the knowledge of the observation ought to guide us in the management of such cases, and induce us, when possible, to remove convalescent children from the deleterious air of the poisoned district, which, indeed, every poor and densely-populated locality may be truly considered. Such removal strongly conduces to improve the impoverished and morbid condition of the blood in most cases of chronic toxemia, and in none is improvement more obvious or more rapid than in stomatitis, more especially of the ulcerative variety, which, if left unheeded, may, and often does, lead to great destruction of tissue, if not to death. This variety is comparatively not uncommon, and I have frequently seen a rapid improvement and recovery (even in some desperate-looking cases) by this most important point being insisted on.

It is, however, worthy of notice, that, notwithstanding what has been said about the predisposing or exciting causes of cancrum oris,—notwithstanding the almost constant occurrence of the exanthematous and other fevers, and of the ever-continued existence of those numerous sources of debility which constantly obtain in every community,—it is curious that the disease is so very infrequent as it undoubtedly is : a fact which forces us to confess our ignorance of its pathology. We indeed witness its occurrence occasionally in children who do not present any marked strumous diathesis, or who have only been very slightly under the so-called predisposing ailment, whatever that may be ; and we can all testify to the hourly-observed fact of very strumous children, of children born and brought up, and shut up in very dunghill hovels, in a miserable state of innutrition and filth, who, notwithstanding the addition of blood-poisoning, in the shape of disease (as measles, or other so-called pre-existing morbid exciting causes), are not attacked even by the ulcerative form of stomatitis.

The occasional arrest of cancrum oris, either by topical applications or the mere removal of the morbid mass, would, along with the facts now stated, tend to indicate a merely local malady ; but, at the same time, although all this be true, and although the real nature of the origin and pathological course of the disease be involved in much obscurity, there can be little doubt as to its being very generally connected with a constitutional origin, a general or blood disease, causing local death. Like local or symptomatic gangrene attacking the extremities, the parts involved are probably destroyed from innutrition, the course of the blood becoming suspended, the vessels being more or less impervious ; the structures thus dying from want of their nutrient fluid.

Post-mortem examination has decided this point ; and when we carefully watch the changes which take place in the structures from the commencement to the fatal end of a case, we shall find that at first the disease is limited, as its name implies, to the mouth,—limited, it may be, to the mucous membrane, which becomes covered by a dirty gray-coloured secretion, afterwards by a brownish pultaceous mass, which conceals the state of the subjacent parts and the true extent of the degeneration. In rudely removing patches of this pseudo-membranous deposit shortly after its formation, the exposed textures are found so puffy and vascular that blood-spots appear, and occasionally some extent of bleeding takes place.

When, however, the gangrenous action is more complete, the parts can be moulded like putty, and cut through without bleeding or pain ; the pulpy sphacelating mass sooner or later assumes a carbonized or charred appearance, the black and now comparatively dry slough becomes a puckered charcoal-like mass, gradually loses its previously swollen anasaruous humid aspect, and ultimately becomes as hard as well as dark as a piece of coal ; the gradual

progress towards this and subsequent changes being indicated by pallor, coldness, and loss of sensation in the parts affected.

On examining the inner surface of the affected cheek, it resembles (more than anything else that I can compare it to) a used lintseed-meal poultice, it being a soft, easily-moulded, and most offensive pulp or putrilage. When this gangrenous mass, which appears charred externally, but is pultaceous internally, is even roughly handled, no uneasiness is usually experienced.

It would appear that this spreading gangrene is very generally limited to one side of the mouth and face; so that, while we may have a foul and foetid ulceration attacking and involving to a great extent the structures of the gums, lips, cheek, and even the jaws of one side, the other side of the mouth and face, as well as all the other parts of the body, may be little, if at all, changed from their natural aspect.

The gangrene which occasionally appears in the external organs of generation or other parts of the body of young children, may be, as generally supposed, essentially the same pathological condition, depending on the same causes, and therefore requiring the same general mode of treatment; but it is not easy to give a sufficiently clear anatomical, physiological, or pathological reason why the gangrenous erosion so characteristic of cancrum oris should commence so very generally in the cheek texture, or rather in the tissue of one cheek, and spread so rapidly, destroying in its one-sided destructive course hard as well as soft parts, the alveolar processes and even the more solid portions of the maxillary bones becoming involved and extensively exfoliated, causing (as we have seen) not only loss of teeth, but of masses of bone of considerable size, which, in the very rare event of recovery, necessarily leads to great deformity of the affected side of the face.

Leaving this, however, to be cleared up by those who have more specially studied the matter, I shall, before coming to the more practical part of this communication, just refer to one other question, and it is this,—The supervention of this fatal form of stomatitis has not unfrequently been attributed to the administration of mercurial doses; and practitioners have been gravely charged with undue caution and want of proper foresight in regard to this assumed special influence of mercury on children. That cancrum oris occurs altogether independent of the administration of any mercurial preparation has been settled beyond all doubt; for although, such cases have occurred after or during the use of calomel or grey powder, they are evidently quite exceptional, arising, it may be, from idiosyncrasy or peculiar susceptibility of the child to be thus specially affected by mercury.

It is well known how difficult it is to produce any sensible effect on the salivary glands or the gums of children by any preparation of mercury whether freely or slowly given. In fact, ptyalism, in very young children especially, has seldom been witnessed by even the

most energetic mercurialist. I have often unsuccessfully endeavoured to produce in the child this effect, which is generally so easily arrived at in the adult, and although it may incidentally happen, or may even actually result from mercury carelessly administered, it is now clearly enough established that the disease in question generally occurs altogether irrespective of special mercurial influence. On this point, also, the authority of Dr West may be here quoted. He says, "Nearly 30,000 children of all ages have come under my care during my connexion with the Children's Infirmary and the Children's Hospital, and I have administered mercury to any of them who seemed to require it, but hardly ever does salivation follow its employment before the completion of the first dentition, and I have never observed that medicine at any age produce any affection of the mouth sufficiently serious to cause me a moment's anxiety."

Having said thus much on the *nature* and *causes* of *cancrum oris*, I shall, in conclusion, and very briefly, give the practical application of my observations, to wit, the character and value of the *treatment* which I consider ought to be had recourse to in all such cases.

In the first or mildest form of stomatitis, viz., the simple *follicular* variety, which appears either in the form of *aphthæ* or *superficial ulcerations*, little more is required than attention to the stomach and bowels; for, by simply correcting any intestinal or gastric derangement, the follicular disease generally disappears. If local applications are necessary, borate of soda in solution, or solution of nitrate of silver (four or five grains to the ounce), will generally do all that is required.

In the second or *ulcerative form* (which is of frequent occurrence, and if neglected, may prove in some cases serious), a tonic treatment is to be enjoined, and, above all, the administration of chlorate of potash, which Dr West and others have called a specific in this affection. Dr West gives it in doses smaller than those in which I usually prescribe it. I give ten grains every two or three hours, and, when combined with the local application of Condry's solution every second day, and the free administration of wine and iron, I have seldom required to do anything else, except of course to remove any loose teeth or alveolar exfoliation acting as sources of irritation.

In the third and dangerous form, to which I have more specially been referring, viz., the *gangrenous form of stomatitis*, the treatment is, like that of the others, twofold, *local* and *constitutional*;—the *local* being here, however, much more severe, amounting to absolute destruction or removal of the morbid tissues by *cauterization*; the *general* or *constitutional* consisting in whatever will tend to build up and invigorate the system, such as quinine or other tonics, full diet with wine, together with ten-grain doses of chlorate of potass often repeated.

The great object to be kept in view is the perfect arrestment or total removal of the gangrenous action; for, if we trust to the occur-

rence of a spontaneous cure, or allow the sloughing process to progress unchecked, which we are too apt to do on first seeing a case of this kind, we shall soon find it too late to have recourse to suitable treatment, the local death having stealthily extended beyond the bounds of arrestment, when even the most energetic measures will in all probability prove unavailing.

There can be no doubt as to the propriety of at once attacking *locally* the local manifestation of the disease, whatever its real essence may be, for here the sooner we destroy, the less will be the ultimate destruction; and although it may, to those especially, who may not have witnessed cases of the kind, seem a cruel and uncalled-for procedure to cauterize the apparently slightly-affected cheek of a perhaps not unhealthy-looking child,—a child whose appetite may be little affected, or whose pulse or expression may not indicate any immediate danger, although to others it may seem harsh, and may be unpleasant to ourselves, still the duty ought to be in all suitable cases timeously and properly done.

Although it is now impossible to say what would have been the result of early and thorough cauterization, in the fatal case which recently occurred in the Children's Hospital (and of which a correctly coloured wax model is now exhibited), there can be no doubt that the serious nature of the case had been overlooked until the disease had made considerable progress, when the local applications first used were neither sufficiently corrective to change, nor sufficiently corrosive to destroy, the sloughy action in the parts involved.

I believe that the issue would not have been different had the hydrochloric or other acid been applied on admission; and my reason for first applying the *perchloride of iron*, and also *Condy's solution*, was to see if either of these local remedies would have any beneficial effect along with the general tonic treatment which was at the same time studiously adopted. The mortification having in this case involved the entire thickness of the cheek, there was little hope of checking it after the admission of the patient.

Be that as it may, from what I have seen and known of *cancrum oris*, I would rather, in any future case, be inclined to overdo than underdo—rather run the risk of disfiguring too much than of destroying too little; for cauterization, if not effectual, is worse than letting alone; and now that we can avail ourselves of the aid of chloroform, there need be no hesitation in at once setting about this to my mind essential matter. Without chloroform, it is a difficult as well as a painful task to apply caustic or other substance efficiently to the interior of a child's mouth, and especially so in the diseased condition we are now considering; for here the difficulty of seeing the internal sloughy surface to which the escharotic ought to be applied, is very much increased by the peculiar tense and tumid state of the affected cheek, which, even under chloroform, materially interferes with our getting at the exact part which we may desire to cauterize. In fact, this swollen and tense condition

of the affected cheek, although an early and valuable external characteristic of the condition of the internal surface, is generally the cause of our not diagnosing and treating cases at the proper time, that is, before the sloughing process has extended outwards beyond the mucous or inner texture of the cheek, in which the disease usually commences, and to which, therefore, our local remedies ought to be early applied.

With chloroform this difficulty is very much overcome, as was found in one of the cases I have cited, and in which there can be little doubt as to the success of the local treatment which was had recourse to. The arrest of the disease was very apparent in that case, and the advantage of chloroform was undoubted, as it enabled me not only to displace the swollen cheek, but to expose its affected surface and the adjoining gums, and thereby allowed me to see what required to be done, and thus greatly facilitated the doing of it.

In the case referred to, I used *nitric acid*, and, as stated in the report, found one application sufficient. The cheek was forcibly turned out, the tongue and adjoining parts were protected from contact with the acid, which, in the absence of a glass rod, was applied by means of a test-tube. Some apply it by means of lint or tow attached to a probe or quill, but the glass rod, or, better still, a *glass brush* (such as I now exhibit), answers every purpose required.

In every case care must be taken to see that under the yellow slough or eschar left by the first cauterization, there do not lurk unaffected sloughy portions; if so, the acid should be reapplied on the following day, and the mouth should be occasionally syringed with solution of chloride of lime, in order to remove the putrid discharges and get rid of the gangrenous emanations which, so long as the dead and dying tissues are left exposed or unaltered, must necessarily prove highly deleterious, if they be not the more immediate and direct cause of death. The danger arising from the presence of decomposing matter cannot be too constantly borne in mind in dealing with cases of true cancrum oris; for, whatever be the exact pathological nature of the structural change,—whether simply the result of an inflammatory exudation into tissues unusually prone to serous infiltration and capillary death, or consequent on contamination of the circulating fluids (a general blood-poisoned condition leading to a special disorganization in the affected parts), there is to my mind no great difficulty in accounting for the marked fatality attending the disease when allowed an unchecked course; indeed its fatality seems explicable enough, without looking for any cause of death *beyond or apart from the mouth itself*, for there we find a *mass of gangrene* which, having lost the inherent power as well as the inherent character of living tissue, is not only incapable of self-regeneration, but is most unlikely to be spontaneously separated or removed by absorption. It is, I consider, by no means improbable that death ensues in such cases not so much from any previous diseased condition or contamination of the blood, as from

the continued and unavoidable inhalation of the poisonous exhalations arising from the gangrenous degeneration within the mouth, which must necessarily be a much more active, as it is doubtless a much more direct medium of blood-contamination than mere local absorption, which latter agency, together with the actual deglutition of the foul discharges from the affected structures, materially tends to destroy life.

It appears to me, that children dying from unchecked cancrum oris are in a great measure *poisoned by the inhalation of the deleterious gases arising from their own oral textures* in a more or less complete state of putrefaction; and that this view of the cause of the extreme fatality of the disease not only explains the immediate cause of death, but points to the necessity for adopting the line of treatment I have so strongly recommended, in order to prevent the air inhaled from being thus directly poisoned.

It may, I think, be safely affirmed, that so long as simple ulcerative action exists, this mode of death need not be feared; but that, whenever gangrene *from degeneration* takes place within the mouth, fatal consequences may accrue; for if foul air, under any circumstances, be poisonous,—if the emanations given off from putrid animal matters be deleterious in proportion to the degree of concentration in which they are inhaled, what I have now advanced must, I apprehend, be correct. This view of the pathology of the disease, moreover, accounts not only for the efficiency of such substances as chlorate of potass in the milder and more curable form of stomatitis, but justifies us in preferring active and well-timed local, to less powerful or merely general treatment in gangrenous stomatitis, in which the air within the mouth is so polluted as to render the atmosphere, not only immediately around the unfortunate patient but throughout the entire apartment, in the highest degree offensive.

If this be true (and those who have ever visited a well-marked case of cancrum oris can vouch for the fact), the conclusion is obvious, and may be thus shortly put. If it be dangerous to allow a foul drain or open cesspool to pollute the air which enters the lungs, the sooner the nuisance is either removed or covered over the better. And this is exactly what cauterization accomplishes in the case of cancrum oris; for, if it have not the effect of immediately disintegrating and removing the entire putrid mass, it either so far changes its character, or, at least, for the time being so covers or crusts over the gangrenous degeneration, as to check or altogether prevent the farther escape of those offensive and most deleterious exhalations, which would otherwise freely mix with, and thereby render poisonous, what may be emphatically called the “breath of life.”

ARTICLE V.—*Report of the Edinburgh Ear Dispensary ; with Notes of One Hundred Cases of Diseases of the Ear, treated in succession during the first months of 1861.* By THOMAS KEITH, M.D., F.R.C.S.E.

THIS dispensary has now been in operation since 1857. It was originally an experiment, and was intended to be continued or not according to circumstances. For some time, indeed, the experiment was a most unsatisfactory one, so far at least as treatment was concerned ; for the cases which first presented themselves were of such long standing, and the diseases in the ear so confirmed, that little or nothing could reasonably be recommended to almost any of the applicants. In course of time, however, as the dispensary became better known, and as the incurable cases were discouraged from continuing their attendance,—and the importunity of some was wonderful,—early application for advice became the rule, and treatment in a corresponding degree became satisfactory and successful. And as an experience of five years has now shown that the institution has been acceptable to those who have attended it, and as it has been the means of saving many ears, the present intention is to continue it, in the hope that the dispensary may some day be of use to our Medical School, and that those who choose may have an opportunity of studying practically a class of diseases—dry and uninteresting, perhaps,—of which, as a general rule, students see little or nothing, and which are most commonly either got rid of, or else simply ignored altogether.

During the last four years 1220 diseased ears have been carefully examined. Of these cases notes have been taken as to the degree of deafness the appearances presented at the first and subsequent visits, and as far as possible regarding their progress. When the attendance ceased or became irregular, the patients—at least the more interesting cases—were visited, when it was practicable, at their own homes. Latterly, many of the cases came from the country, and these were generally of necessity lost sight of. Cases of simple cerumenous accumulations—causing no small degree of trouble at the dispensary,—are not included amongst these ; for as more or less relief was generally afforded on cleaning out the canal, the patients were satisfied for the time being, and were seldom seen again.

Of these 1220 it would be easy to give a selected number of successful cases, but it has hitherto been thought better to refrain from publishing any of the cases that were treated during the early years of the dispensary's operations ; for, doubtless, at first errors in diagnosis and treatment were not uncommon. It is now proposed to give a brief account of all the cases that applied in succession during last year, whether thought fit for treatment or not. They amount in all to about 250, and of these the present paper contains an abstract of the first hundred.

No classification of the various diseases has been attempted, but the cases are given in the order in which they presented themselves at the dispensary; the state of the ear at the first examination being given, and then, as far as ascertained, the result of treatment at the end of the attendance. When the case was considered as not a fit one for treatment, or when the patient did not return a second time, the appearances on examination are only given. At best they are all brief and imperfect; but—perfect or imperfect, successful as well as unsuccessful—they are given just as they are, with the purpose of showing that, having once established a careful diagnosis, a good deal may be done by treating the diseases of the ear with the simple remedies which we are all in the daily habit of employing in the treatment of diseases of other organs; for the ear requires no particular special treatment, and there is no mystery about its diseases. But till the common tubular speculum comes into more general use, a correct diagnosis in ear cases will be simply impossible; and till it be recognised as an established principle—as was long ago first demonstrated by Mr Wilde,—that nineteen out of every twenty cases of deafness have their origin in inflammatory action in some part or other of the ear, and till patients are encouraged to seek relief in, and practitioners to attend to, slight and incipient diseases of the organ, the practice of aural surgery must necessarily remain obscure and unsatisfactory, and the treatment empirical and unsuccessful.

It may be stated that nearly all the examinations were conducted in bright sunshine, the dispensary hour being noon. When sunlight was not to be had, a short-focussed condenser was made use of, and artificial light was never found necessary. The normal hearing distance with the watch, used in testing the degree of deafness, was between six and seven feet.

CASE 1. Loss of Hearing resulting from an attack of Acute Inflammation of the Tympanum and Membrana Tympani.—Thomas Campbell, æt. 58; applied 1st January 1861.—About seven weeks ago, when perspiring profusely, was exposed to a current of cold air. Towards evening he began to suffer from pain in the right ear, which gradually extended over that side of the head, and was followed by dulness of hearing, confusion, and a continual hissing noise as if he were standing beside a steam-engine letting off steam. These symptoms continued with varying severity for a fortnight, when the pain was relieved by a blister behind the ear, and gave way to a dull throbbing or pulsation, which, with the hissing sound, still remains. Various stimulating applications had been made use of, and syringing the ear had increased his suffering.

The meatus is dry; its inner third is thickened, and is narrower than the corresponding portion in the left ear. The membrana tympani has a shrunken appearance; it is very opaque, much thickened, and fallen in towards the promontory. The thickening of the upper part of the membrane is so great, that the handle of the malleus is scarcely distinguishable; but along its course several large vessels appear, from the irritation caused by the introduction of the speculum. He cannot inflate the middle ear, and the watch is heard only on pressing it against the auricle; but its sound is not perceptible when it is applied to the temple.

That this case was originally one of acute inflammation of the membrana

tympani, and that the inflammatory action had extended unchecked over the tympanic cavity and its contents, and had probably also affected the vestibule and labyrinth, there can be little doubt. As a consequence of this, lymph had been deposited in large quantity between the various layers of the membrana tympani, and upon the surface of the middle ear, producing a thickening of the membrane, and probably binding it by bands of adhesion towards the promontory, interfering thus with its proper vibration, hindering the free motion of the chain of bones, and probably also giving rise to thickening of the membrane of the fenestra rotunda.

As the results of disease were so visible and manifest, no reasonable expectation could be held out of recovery of the hearing. In the hope, however, of removing the congestion which still lingered about the deeper parts of the ear, and of relieving the tinnitus, from which the man suffered exceedingly, he was directed to blister freely over the mastoid process. This he continued to do two or three times a-week, and at the end of three months he reported himself as being entirely free from the distressing sounds. The hissing noise had disappeared, and had given place to a slight tidal murmur, which was only occasional and gave little inconvenience. Beyond his being feebly sensible of the ticking of the watch when pressed against the temple, there had been no improvement in the hearing.

2. *Discharge from left Ear—Aperture in Membrana Tympani.*—John Peters, æt. 17; Jan. 1.—Since an attack of scarlet fever eight years ago, has had discharge from the left ear, accompanied by deafness. At present the hearing distance is one inch.

On examination the meatus is found to contain a large quantity of zinc ointment, which the patient had been for some time in the habit of using to check the discharge. The inferior margin of the membrana tympani, to the extent of about two lines, is separated from its bony attachment, but there appears to be little or no loss of the substance of the membrane itself. Filling the aperture, and growing from the bony margin and from the hollow at the inner extremity of the meatus, are numerous large granulations. These were touched three or four times, at intervals of a week, with the solid nitrate of silver. At the end of a month they had disappeared, and the discharge had also ceased. The membrana tympani seemed to have regained its attachment to the bone, for no aperture could be detected, and the patient could not blow air through the ear as formerly. The hearing had much improved, the watch being easily heard at the distance of five or six feet from the ear. Ten months afterwards, his hearing continued quite good.

3. *Small Perforation in Membrana Tympani after Scarlet Fever.*—John Fyfe, æt. 24; Jan. 1.—Has had discharge from the right ear for twelve years after scarlet fever. For long the discharge was profuse; but for several years past, since he began the daily use of the syringe, the quantity has diminished and the hearing has improved. At present the hearing distance is ten inches, and the discharge is slight.

There is a small perforation about the size of a No. 3 shot, near the lower and anterior edge of the membrana tympani. The rest of the membrane is perfectly healthy and translucent. On filling up the aperture in the drum with a small pellet of cotton wool, the hearing distance is at once increased from ten inches to two feet and a half. It is obvious, however, that from the smallness of the aperture, and the difficulty of retaining the wool in the proper position, the patient will not be able to derive any benefit from its employment.

This man was seen about eight months after this. The discharge had ceased, but the aperture remained as before.

4. *Inflammation of Tympanum and Membrana Tympani in both Ears.*—David Ford, æt. 38, a thin, delicate-looking man; applied Jan. 8.—He has gradually lost his hearing since a severe cold he got after a wetting about five weeks ago. Has only suffered from occasional attacks or rather shoots of pain; the tinnitus has all along been very distressing, especially at night when he lies down.

He is now very deaf. On the right side the hearing distance is half an inch; on the left the watch is heard only when applied to the auricle. It is heard over both temples.

The appearances on inspection are the following:—In both ears the meatus is dry, the usual secretion being absent; the inner portion of both tubes is much more vascular than natural. The membranæ tympani are of a dark brownish-red colour, numerous enlarged vessels are seen running across, especially along the manubrium of the malleus. The injection of the right membrana tympani is more uniform than that of the left, which is somewhat mottled, as if lymph was deposited in its substance. The usual triangular bright spot is absent, and in its stead there are two very small points of reflected light, close to the lower margin of the membrana tympani; these are slightly larger in the left. The throat is somewhat red and swollen. Both Eustachian tubes are pervious, but the air enters irregularly and with a flapping sound. The tinnitus is constant and very distressing. It is very variable, but most generally like the waving of the wind through trees.

On the 16th he had got fresh cold and was considerably deafer, and required to be shouted to ere he could hear; the watch was heard only on pressure, and not at all over the temporal regions; the membranæ tympani were of a dull yellow colour, and the bright spots had disappeared. Complained much of a loud pumping noise which prevented him from sleeping.

On the 22d the noises were somewhat less troublesome. The hearing distance was half an inch in the right ear. Both membranæ tympani were uniformly dull, having a sodden appearance. No air was heard to enter the middle ear.

On the 12th of February the hearing distance had increased to three inches in the right ear, and to half an inch in the left. The progress of the case was thenceforth satisfactory. The hearing gradually returned, and by the end of March he could hear as well as ever he did.

The treatment consisted in the application of leeches to the orifice of each meatus, free counter-irritation over the mastoid processes, from which a discharge was kept up for nearly two months, and in the administration of mercurials so as gently to affect the mouth, and followed by quinine and cod-liver oil, etc.

This patient was seen about three months ago. His hearing remained perfect, and his general health was much improved.

5. *Catarrh of Middle Ear with discharge through the Membrana Tympani.*—Mary Ford, æt. 11, daughter of the above patient, has had a discharge from the right ear for two months. Attacks of earache, followed by deafness, had existed more or less for some weeks previous to the appearance of the discharge from the ear.

The hearing distance is three inches. The meatus is red and tender, and contains much thickened epithelium. The membrana tympani is also thickened, and has a macerated appearance; opposite the opening of the Eustachian tube is a very small perforation in the membrana tympani, through which a mucous discharge is seen coming from the cavity of the tympanum. The mucous membrane of the fauces is thick and red, and the tonsils are enlarged. Air passes, however, freely into the tympanum.

The meatus and membrana tympani were washed over with a solution of nitrate of silver, fifteen grains to the ounce. This was repeated occasionally as long as the discharge continued. She was also ordered cod-liver oil and the muriate of iron, with moderate counter-irritation behind the ear.

Three months afterwards she was considerably improved. The discharge had ceased for six weeks, and the opening in the drum had closed. The hearing distance was upwards of two feet. The membrana tympani was still dull, and more concave than natural. When last seen, three months ago, the hearing was continuing to improve.

6. *Case of Polypus in Right Ear.*—James Jobson, æt. 21, engineer; Jan. 8.

—Three or four years ago, was annoyed with excessive itchiness in the right ear. To relieve this he got into the habit of picking it with anything that came in his way. Some time after he observed a slight discharge from the ear, which has continued ever since, and is occasionally profuse. He suffers much from tinnitus and a feeling of oppression in his head, especially when at work.

The hearing distance is four inches. On examination it appeared at first as if the whole membrana tympani was removed, and the part visible was the mucous membrane of the tympanic cavity. On using the probe, however, the membrana tympani was found to be concealed by a very vascular and flattened polypus, which was attached by a narrow neck to the floor of the meatus, close to the margin of the membrana tympani. The tumour was easily seized by its base, and the greater part of it brought away. After its removal a small perforation was seen near the posterior and lower margin of the membrana tympani, which seemed much congested and fallen inwards. The Eustachian tube was found to be shut on that side.

Feb. 19. The base of the polypus has been touched two or three times with the nitrate of silver, and has now entirely disappeared and the discharge along with it. The painful sensations in his head when at work have likewise gone; the Eustachian tube opened a few days after the removal of the polypus; the watch is heard at the distance of six feet; and the opening in the membrana tympani has closed, but apparently it is only covered by the mucous membrane of the tympanum.

7. *Eczema of Auricles and Meatus; Great Induration of the Meatus in both Ears.*—Mrs Dewar, æt. 55; *Jan. 8.*—For upwards of two years has been gradually losing her hearing. She has all along had great itchiness in the ears and has suffered much from tinnitus, which is constant, and at night very distressing. At present the hearing distance is half an inch in the right ear, and one inch and a half in the left.

Both auricles are nearly twice their natural size; they are hot and red, and covered with thick crusts, and there is a thin sticky discharge exuding from the surface. The surrounding parts are in much the same state. Both passages are much swollen and indurated, and so contracted as not to admit the point of the smallest speculum. Indeed the right is so narrow as scarcely to allow a common-sized probe to enter. There is a thin milky discharge coming from both, which has run down and excoriated the cheek and neck.

The crusts adhering to the auricles were removed, the parts thoroughly cleaned and dried, and then the whole was freely rubbed over with a thirty-grain solution of nitrate of silver. As far as the contracted state of the passages would admit, the same solution was applied to them by means of a piece of cotton wool held in Wilde's ear-forceps.

Feb. 5. The nitrate-of-silver solution has been applied twice a-week for a month, and with much relief. The pain, heat, itchiness, and discharge have disappeared, and the auricles have nearly regained their natural appearance. The left meatus is quite open, and the membrana tympani is now in a healthy condition. The right meatus, however, is still much indurated and contracted, and remains little affected by the nitrate of silver.

March 12. The right meatus has been rubbed twice a-week, with a sixty-grain solution of nitrate of silver. The indurated state of its walls has subsided, and the parts have resumed their natural aspect. The tinnitus has disappeared, and she hears perfectly. Six months afterwards, the parts remained quite healthy.

8. *Deafness resulting from dense atheromatous deposits in both Membrance Tympani.*—Wm. Greenhill, æt. 30; *Jan. 8.*—Was a sailor on board one of the ships engaged at the bombardment of Sebastopol. He dates the commencement of his deafness from that time; for after the engagement he was sensible of a hissing noise in his ears, which has continued ever since. He was also much exposed during that winter to cold and wet, and had repeated attacks of pain in the ears and head. He is now so deaf that he says he could not hear a cannon go off beside him.

The appearances on examination are much the same in both ears: the meatus dry and white, and the membrana tympani much thickened and almost completely transformed into dense masses of cretaceous deposit. The case was evidently a hopeless one.

9. *Loss of Hearing from destruction of Membrana Tympani—Exostosis in Meatus.*—James Miller, æt. 25.—The hearing is quite lost in the right ear, from which there has been a copious discharge for the last four years.

On cleaning out the passage, a small exostosis is visible, growing from about the middle of the floor of the meatus, and projecting upwards by a narrow neck. This growth was not interfered with, though it could easily have been broken off with a pair of forceps, as the deafness was seen to be caused by the condition of the deeper parts,—the membrana tympani being almost entirely removed, and the mucous membrane of the tympanic cavity being thick and very vascular.

10. *Chronic Inflammation of Tympanum and Membrana Tympani—Polypi in both Ears.*—William Bryan, æt. 15; Jan. 8.—About fourteen months ago, had repeated attacks of pain in the right ear, followed by gradual deafness, and after a few weeks by discharge. In about three months the other ear became similarly affected. He now complains of pain in the head, a feeling of pressure in the ears, great depression of spirits, and occasional attacks of giddiness. The watch is heard on pressure on the right ear, and at the distance of two inches from the left. The tonsils are somewhat enlarged, the mucous membrane of the throat and nose is thick and red; both Eustachian tubes are impervious, and there is profuse discharge from both ears.

There is a large polypus filling up the right meatus and projecting externally. The left meatus is much swollen and thickened, and the bottom of it filled up with several small polypi. There is no portion of the membrana tympani visible in either.

The larger polypus, which was of a firm consistence, was removed by means of Wilde's snare. It was attached by a broad base to about the middle of the posterior wall of the meatus. The smaller polypi in the left ear were broken up and destroyed as much as possible. They were chiefly situated in the groove at the inner extremity of the meatus, close to the lower margin of the membrana tympani.

15th.—The remains of the polypi were freely touched by the galvanic cautery.

22d.—Since last week, whether in consequence of fresh cold or of the too free application of the cautery, has got an attack of acute inflammation of the right meatus, which is much swollen and very tender; the stump of the polypus has also swelled up. In the left the polypi have disappeared. The left Eustachian tube is still impervious.

12th February.—The discharge has now ceased from the left ear. The air enters the middle ear with a gurgling sound. The hearing distance has increased to between four and five feet. In the right, the polypus, which has been occasionally touched with nitrate of silver, has almost disappeared, and the membrana tympani has become visible: its posterior and inferior portion is seen to be granular. Eustachian tube still shut.

25th November.—After nearly a year this patient is still under treatment from time to time. His case has been an exceedingly obstinate and troublesome one. The granular condition of part of the right membrana tympani was very difficult to get rid of, and after a time it appeared in the left also. The granulations, when destroyed one week by some escharotic, generally the solid nitrate of silver, had often reappeared by the next. The right Eustachian tube was long in becoming free; while the left was one week open,—the next shut. The progress of the case was likewise much retarded by occasional acute attacks of irritation in the middle ear, and by attacks of cold in the head, and sore throat; and at one time there was for several weeks a small perforation in the right membrana tympani. Keeping in view, however, that

the primary disease in the case was a chronic inflammation, or hypertrophy of the mucous lining of the tympanic cavity, and that the affections of the membrana tympani and external meatus were merely secondary, and dependent upon the deeper irritation, means were perseveringly used for the cure of this unhealthy state of the middle ear. These consisted chiefly in very long continued counter-irritation, followed by, for some weeks, small doses of the bichloride of mercury, with quinine and iron or other tonics, according to circumstances. The result has been, that at present the hearing is almost perfect, the watch being heard on both sides at a distance of between five and six feet. The meatus and membrana tympani have nearly resumed their healthy appearance. Owing, however, to an apparently relaxed and weak state of the membranes, they occasionally fall inwards when he catches cold, and the deafness slightly returns for a day or two; that he will ultimately get quite well there can be no doubt.

11. *Abscess in Anterior Wall of Meatus*.—Mrs Dickson, æt. 25; Jan. 15.—Has had severe pain in the left ear for the last ten days, in consequence of the formation of an abscess in the meatus, which is now pointing anteriorly. It contained about a teaspoonful of pus, and its evacuation was followed by immediate relief.

12. *Congestion of Middle Ear—Occlusion of Faucial Orifice of Eustachian Tubes*.—Jane Hastie, æt. 10.—About two months ago, deafness came on rather suddenly after a cold, but it was neither preceded nor followed by pain in the ears. Both membrana tympani were found on inspection to be of a dark leaden, almost black colour, and much more concave than in the normal state of the parts. These appearances were doubtless caused by a congested state of the middle ears, for both Eustachian tubes were impervious. The throat was also red and swollen. The fauces were washed over with a strong solution of nitrate of silver, and the acetum lyttæ applied freely behind the ears. No opportunity was, however, given of observing the effect of this treatment, for the girl did not again make her appearance at the dispensary. Doubtless, the symptoms would disappear in a week or two.

13. *Eczema of Auricle and Meatus*.—Elizabeth Blaikie, æt. 50; applied Jan. 15, on account of an eczematous condition of the right auricle. The meatus was similarly affected, and, besides, contained a mixture of pus and thickened epidermis. After this had been removed, and a few applications of a fifteen-grain solution of nitrate of silver made to the auricle, meatus, and membrana tympani, followed by the employment of the weak citrine ointment, the parts got into a healthy state, and the hearing improved. The left ear contained a large polypus projecting from the meatus; it was the size of a cherry, dense white, and almost cartilaginous; it had existed for upwards of forty years. For many years the discharge which had long accompanied it had ceased, and she had suffered no inconvenience from its presence; and, satisfied with the improvement which had taken place in the right ear, she was unwilling to have it interfered with in the meantime.

14. *Loss of Membrana Tympani after Scarlet Fever—Thickening of Mucous Lining of Tympanum*.—Thomas Smith, æt. 12; Jan. 22.—Has had a profuse discharge from the left ear since he had scarlet fever, five years ago. The hearing distance is two inches. On examination, the membrana tympani is entirely gone, and the lining membrane of the tympanum is seen to be thick, red, and swollen. To reduce this exuberant state of the mucous membrane of the middle ear, it was washed over with a strong solution of the nitrate of silver—one drachm to the ounce. After six weeks' treatment the discharge ceased, with the occasional exception of a scarcely appreciable mucous discharge. The hearing distance had increased to four or five inches, and the ear felt quite comfortable. No benefit was derived in this case from the use of the artificial membrana tympani.

15. *Chronic Inflammation of Tympanum—Polypi in both Ears*.—Wilhelmina

Taylor, æt. 12; *Jan. 29*.—About three years ago, first had attacks of earache, followed by temporary dulness of hearing. These attacks increased in frequency, and were generally followed by slight discharge, which for some time ceased spontaneously after a week or two. For the last twelve months, however, the discharge has been profuse, and latterly, her hearing has become much impaired. The watch is heard on application to the right ear, and at the distance of six inches from the left. The right Eustachian tube is impermeable, the left free.

In the right meatus are several small polypi, filling up the inner half of the passage, and concealing the membrana tympani. In the left is a polypus the size of a large bean. This was removed by Wilde's snare, and the smaller growths in the right ear were broken up as much as possible, and when the bleeding had ceased they were touched by the galvanic cautery. The subsequent progress of the case was satisfactory. The remains of the polypi were touched twice a-week, sometimes with one escharotic, sometimes with another. Upon the whole, the nitrate of silver, though somewhat slow in its operation, was the best. The strong nitric acid answered very well. A small pellet of cotton wool held in Wilde's ear-forceps was dipped into the acid, and then applied through the speculum. In this way the smallest polypus or granulation may be touched without the slightest fear of the acid spreading upon the sensitive walls of the meatus. The potassa cum calce was also used; but it did not answer so well, causing more pain than either the nitrate of silver, nitric acid, or the galvanic cautery.

At the end of two months the discharge had ceased. The hearing distance had increased to five feet in the right ear, and to three feet and a half in the left. The membrana tympani, however, remained in both ears somewhat dull and thick.

16. *Right Membrana Tympani destroyed—Congestion of Left Tympanum and Membrana Tympani*.—William Wood, æt. 25.—Has had very imperfect hearing with the right ear since an attack of measles in his childhood. About ten days ago he suddenly became deaf in the left ear. The hearing distance is one inch.

The right membrana tympani is nearly removed, a small edge only being left. The mucous membrane of the middle ear is seen to be thick and red. There is, however, but a slight mucous discharge. The left meatus is dry and red at its inner portion, the membrana tympani is very concave, and of a dull red colour. The space of reflected light is very large; there are numerous enlarged vessels running across the membrane, and there is great vascularity along the course of the malleus. The Eustachian tube is impervious.

The application of a few blisters behind the ear, with the use of a stimulating gargle, removed the deafness in about a fortnight.

17. *Catarrh of Middle Ear with discharge through the Membrana Tympani*.—Daniel Macfarlane, æt. 18.—Since an attack of scarlet fever many years ago, has been liable to occasional fits of deafness, accompanied by discharge from the left ear. The present attack came on with cold in the head two months ago, and has lasted longer than on any previous occasion: the discharge has also been more copious. The hearing distance is four inches. The meatus is found to be full of a thin ropy discharge; on removing which, there is visible a small perforation close to the lower edge of the membrana tympani. The membrana tympani is of a bright red colour, and there are several large granulations along its inferior margin. These were destroyed by the nitrate of silver; and by the daily use of the syringe and free counter-irritation, the discharge subsided, and in about three weeks the opening in the membrane closed, and the hearing returned as good as ever.

18. *Chronic Inflammation of Meatus—Excessive Itching in the Ear*.—James O'Donnel, æt. 30.—Complains of an intolerable itching in both ears. He was a patient at the dispensary about a year ago, on account of chronic inflammation, with discharge, of the meatus. He was then cured of this and remained

quite well till about six months ago, when he began to feel an itchiness deep in the ears. Latterly, it has become almost unbearable. The hearing is scarcely affected.

There was removed from the bottom of each meatus a mass of thickened epidermis, which formed a complete cast of the inner third of the canal and membrana tympani. The parts were then smeared over with the brown citrine ointment, and he returned the week after to say that the itching had entirely disappeared.

19. *Deafness from loss of both Membrana Tympani—Unhealthy state of Tympanum.*—Anne Watt, æt. 4.—An instance of neglected discharge,—a case very commonly met with, both in dispensary and private practice. The discharge was first observed when cutting her first teeth, and was not interfered with, in the hope that it would go off. The child is now nearly quite deaf; both ears are tightly shut up with plugs of cotton wool; on removing which, the matter gushed out. Both membranæ tympani are quite removed, and the middle ear filled up with exuberant granulations, or rather by small polypi. The child was not again brought back.

20. *Small Polypus concealed in the groove at the inner extremity of Meatus.*—John Napier, æt. 35.—Applied on account of a slight discharge, which had existed for three or four months, from the right ear. Latterly, his hearing had become impaired, and he had occasionally observed a slight mixture of blood with the discharge. Hearing distance, six inches.

After washing out the meatus, three polypi, about the size of small currants, were seen growing near the inferior margin of the membrana tympani, which was thick and dull. Their attachments were so slight that they easily came away with Wilde's forceps. After this the discharge diminished, but did not cease; and it was not till a month afterwards, when another small polypus was discovered and removed, that the discharge disappeared, and the hearing returned. The polypus was lying concealed in the groove at the inner extremity of the meatus, close to the membrana tympani, and was found out by means of the probe,—it being invisible by the ordinary examination with the speculum.

21. *Catarrh of Tympanum, with discharge through an opening in the Membrana Tympani.*—James Ramsay, æt. 9; Feb. 12.—Had slight earache three weeks ago, which was followed by discharge from the left ear. Hearing distance, four inches.

The meatus is swollen and red, and contains a thin ropy discharge, with pieces of detached cuticle. The external layer of the membrana tympani is also thickened, and here and there detached, leaving the membrane beneath very red and tender. In the centre of the anterior vibrating portion is a small opening into the tympanum, through which a muco-purulent discharge is escaping from the middle ear.

By perseverance in the use of iron, quinine, and cod-liver oil, with free external irritation, the daily use of the syringe, and an occasional wash with a weak solution of nitrate of silver, at the end of two months the discharge had ceased, the opening in the membrana tympani closed, and the hearing had nearly quite returned, the hearing distance being five feet.

22. *Thickening of Membrana Tympani and Tympanum.*—Mary Danson, æt. 55; Feb. 19.—Ascribes her deafness to a severe cold she got when sitting in a draught about a year ago. Has had several colds since then, with occasional uneasiness in the ears, and her hearing is always then much worse. The hearing distance is one inch on the right side and four on the left. The noises are also troublesome.

The meatus on both sides is dry and smooth. The membrana tympani is dull, opaque, thickened, and collapsed. The Eustachian tube permeable, but with difficulty, and air enters with a crackling sound. The appearances are much the same in both ears.

23. *Catarrhal Inflammation of Middle Ear.*—Robert Grant, æt. 13.—A fort-

night ago, took severe pain in the left ear, which continued for three days, and was relieved by discharge. Hearing distance, contact.

The meatus is much swollen, and tender; the cuticular layer much thickened, and detached in large white flakes; the membrana tympani has a sodden, macerated appearance, and has a small perforation in the centre. The case was in every respect almost identical with that of case 21. At the end of six weeks the hearing had increased to eight inches, and the discharge was gradually diminishing, when he discontinued his attendance.

24. *Inflammation of Tympanum and Membrana Tympani—Occlusion of Eustachian Tubes.*—William Black, æt. 11; Feb. 19.—Has suffered from deafness, with occasional attacks of earache, for a fortnight. The hearing distance is one inch and a half on the right side, and four inches on the left. He complains of a feeling of weight or pressure upon his ears, and has constant tinnitus,—the noises being very variable and very loud.

The appearances presented on examination are much the same in both ears. The meatus dry, vascular, and very tender; its inner third of a deep red colour. There is great vascularity in the upper portion of the membrana tympani, especially along the course of the malleus. The lower portion is dull and concave, and both Eustachian tubes are impervious.

He was treated last summer for a similar attack, which was brought on by a cold, from too long bathing in the sea, and recovered his hearing in about a month. On this occasion the attack was much more tedious; and notwithstanding the employment of active measures to check the progress of the inflammatory action, lymph became deposited to a large extent upon and between the layers of the membrana tympani, the usual cerumenous secretion disappeared, the meatus became dry and scaly, and in a short time the membrana tympani was of a uniform dull yellow colour. By the end of March the lymph began to be absorbed, and about the end of April the membrana tympani had cleared to a great extent, and had almost regained their natural translucency. Still the Eustachian tubes remained impervious, and the deafness as bad as ever. On several occasions the Eustachian catheter was passed into the mouth of the Eustachian tube, and air blown into the middle ear. This was invariably followed by slight crackings in the ears; and for the afternoon the hearing was much improved, but by next morning the deafness had returned as before. This was continued from time to time, with uniformly the same results,—only temporary benefit following the passage of the catheter; and it was not till the beginning of the warm weather in June, when some loud explosions took place in the ear, and were followed by a perfect cure of the deafness,—the membrana tympani having at last resumed their normal curvature.

25. *Chronic Discharge, with thickening of Membrana Tympani.*—Mrs McKail, æt. 28; Feb. 26.—Has had a copious discharge from one ear for upwards of three years. The membrana tympani has a macerated appearance, like a piece of washed leather, being evidently very much thickened. It was washed over with a strong solution of nitrate of silver. The patient, however, did not again apply at the dispensary.

26. *Chronic Inflammation of Tympanum and Membrana Tympani.*—Charles Gilchrist, æt. 18.—Has been gradually losing his hearing for the last four years. From the nature of his occupation, he is much exposed to cold and wet; and occasionally, when he has a cold, is almost quite deaf. Hearing distance,—right ear, half an inch; left, three inches and a-half.

Both passages are dry and smooth, and the membrana tympani dull, white, and collapsed. Air enters the middle ear on the left side with difficulty, and not at all on the right. The mucous membrane of the throat is thick and red.

He was directed to take, twice a-day, one-sixteenth of a grain of the bichloride of mercury, with two grains of quinine, to apply smart counter-irritation, and to use a stimulating gargle for the throat; to continue this treatment for six weeks, and then to return. He had come a considerable distance from the country, and up to this time has not reappeared.

27. *Occlusion of Eustachian Tubes*.—Helen Scott, æt. 47; *Feb. 26*.—Three months ago, after exposure to cold, began to feel slight deafness. In the course of a few days, she says, she was almost quite deaf, with a painful feeling of pressure in her ears and head. After two or three weeks the hearing began to return, and now she hears the watch at the distance of six inches from the right ear, and eighteen inches from the left. During the last few weeks the improvement in her hearing has not continued, and she thinks she scarcely hears so well as she did a month ago.

Both membranæ tympani are very concave, and of a somewhat dark colour, especially the right, in which the usual spot of reflected light is very large. The throat is somewhat swollen, and the right Eustachian tube impermeable.

Free counter-irritation was employed for the next fortnight, and the fauces washed from time to time with a strong solution of nitrate of silver. Under this treatment the hearing of the left ear rapidly improved; but that of the right remained as before. The Eustachian catheter was accordingly used every third or fourth day, and air blown through it into the tympanum, so that in the course of another fortnight the air passed freely into the middle ear, and the deafness entirely disappeared.

28. *Calcareous Deposits in Membrana Tympani*.—David McLaren, æt. 18; *Feb. 26*.—States that he lost the hearing in the right ear in consequence of an injury of the head, received in his childhood. In the left ear, deafness has been coming on for about four years. He attributes it to cold, wet, and exposure when at sea. The hearing distance is contact in the left, and two inches in the right ear.

The right membrana tympani is much thickened, and there is a large opening about its centre, involving a loss of nearly one-third of the whole membrane. There is no discharge; the parts are all thick and white. The left is thick and fallen inwards, and almost one mass of atheromatous deposit: a state of matters apparently always incurable.

29. *Abscess in Walls of Meatus*.—Mrs Cameron, æt. 25.—Has suffered severe pain in the left ear for upwards of a week. On examination this was found to be caused by the formation of an abscess in the anterior wall of the meatus. Relief followed the evacuation of its contents.

30. *Polypus*.—Mrs Dennie, æt. 28; *Feb. 26*.—Six months ago, had a severe attack of pain, followed by suppuration, in the left ear. The discharge has continued profuse since then; and latterly she has got very deaf. Hearing distance, contact.

There was a large polypus filling up the meatus, and on its removal by means of Wilde's snare, the hearing was improved. No opportunity was given of seeing the state of the membrana tympani, as the patient did not return.

31. *Chronic Inflammation of Tympanum and Membrana Tympani*.—Francis Reid, æt. 20.—His hearing has been gradually diminishing for the last two years, about which time he was much exposed to cold. He has never had any pain in the ears, but the tinnitus has been very troublesome and constant. The hearing distance is two inches on the right, and three on the left side.

The meatus is dry and white. The membrana tympani is white and thickened; the handle of the malleus is very prominent, and the membrane itself fallen inwards towards the promontory. Both Eustachian tubes are permeable, but the air enters with a flapping sound. No improvement followed in this case, and at his last visit he was even deafer than before, and the noises fully more troublesome.

32. *Case of Nervous Deafness*.—Alex. Eddington, æt. 40.—States that, five years ago, after an attack of paralysis, he gradually lost his hearing. During the last two years his hearing has been gradually returning,—the hearing distance being one inch on either side. His speech is still much affected; his gait is unsteady, and he gives a very confused account of his previous history. On examination no trace of disease is visible in either ear, both membranæ

tympani being perfectly healthy. The case was evidently not one for any special local treatment, and he was not seen again.

33. *Supposed foreign body in the Ear*.—John Stirling, æt. 4; *March 12*.—Was brought by his mother, in great distress,—a piece of glass bead being supposed to have been put into his ear when at play with some other children a few days previously. Various attempts had been made to extract it, but ineffectually, and there had been a good deal of bleeding in consequence. The child screamed so violently on the least attempt at making any examination of the ear, that it was necessary to put him under chloroform. A large hardened clot of blood was removed from the meatus, and on bringing all the parts into the field of the speculum there was found to be nothing in the ear after all. The mother went away quite satisfied.

34. *Case of Deaf Mutism*.—George Farmer, æt. 18 months.—His mother thinks that till five months ago he heard as her other children. He was easily awakened, and seemed sensible of noise. Latterly, he has become very passionate. About five months ago, she observed a scaly eruption round both ears, and the child was continually picking at them; they were apparently very itchy, for rubbing them always quieted him. Since that time his mother began to think that he was beginning to be insensible to any but the loudest sound. At present he is evidently quite deaf, and insensible to any sound.

The external meatus and surrounding parts are eczematous, also the meatus internally; on clearing away some scales the membrana tympani is brought into view, distinctly thickened, and of an almost glassy appearance in both.

35. *Congestion of Middle Ear—Occlusion of Faucial Orifice of Eustachian Tubes*.—Jessie Watson, æt. 20.—Has been very deaf for about a week, subsequent upon a cold and sore throat. The meatus in both ears contains a good deal of soft cerumen. No improvement, however, took place on its removal. The membranæ tympani are both of a dark blue colour, and very much fallen inwards; both Eustachian tubes are shut, and the throat is swollen and red. The faucial orifices of the Eustachian tubes—at least as near as possible—were touched with the solid nitrate of silver, and she was desired to gargle the throat very freely. In the course of ten days several explosions took place in the ears, and the hearing returned.

36. *Chronic Inflammation of Lining of Tympanic Cavity and of the Membrana Tympani*.—Margaret Angus, æt. 7; *March 19*.—Has been dull of hearing for five months, and within the last three weeks her deafness has much increased. During all this period, and for some time before the dulness was observed, she had severe attacks of earache. At present the hearing distance is four inches on the right side and two on the left.

The meatus is very large, and admits the point of the little finger. In the left ear the membrana tympani is very vascular along the handle of the malleus. The edges of the membrane are comparatively clear, but there is a large mass of dense lymph deposit occupying its centre, and numerous enlarged vessels are seen running across it. In the other ear there is less opacity, but more general vascularity. The mucous membrane of the throat is thick, and both Eustachian tubes are impermeable.

On the 23d of April, when she made her last visit, the hearing was much improved: the hearing distance being three feet on the left side and twenty inches on the right. The membranæ tympani were still dull and thickened, and very far from being in a healthy state; both Eustachian tubes were permeable, and the condition of the throat improved. The treatment during this time consisted in free counter-irritation, with small doses of the bichloride of mercury, with iron and cod-liver oil.

37. *Chronic Thickening of Tympanum and Membrana Tympani*.—James Reid, æt. 10; *March 19*.—Has been deaf for eighteen months. The deafness was preceded by many attacks of earache. When a child, had a discharge for several months from the right ear. It ceased spontaneously.

The hearing of the right ear is almost gone,—the watch being only heard on pressure; the left is little better. The right membrana tympani is covered with a thick viscid discharge; on removing which, the membrane is seen to be much thickened and fallen inwards; there is also a small perforation about its centre; the left is thickened and likewise concave; the thickening is irregular, showing numerous small points of reflected light; parts of the membrane have a vitreous appearance. He cannot inflate either ear; the throat is red and swollen, and the tongue is red, backed, and irritable.

38. *Large Aperture in Membrana Tympani*.—Smith Ker, æt. 17.—Has had discharge from the right ear for five years; has never had pain or uneasiness beyond discomfort from the offensive nature of the discharge. Hearing distance three inches.

The meatus is narrow, and the membrana tympani is visible with difficulty. It is much thickened, and there is a large deficiency in its posterior and inferior portion, amounting to nearly one-third of the whole.

39. *Anchyllosis of Stapes*.—Charles Lyon, æt. 28.—For eight or ten years has had great dulness of hearing. During the last six months this has much increased. He suffers much from tinnitus, especially from a ticking in the ears, which is very troublesome. He hears quite well when there is much noise going on around him: when he is at work, or in the street, or in a railway carriage. He hears better sometimes when he gives the auricle a sudden pull; sometimes also after yawning; but then only for an instant. The hearing distance is half an inch on the right, and nearly two inches on the left side. The appearances presented, on examination, are much the same in both ears. The meatus is dry and smooth, with numerous tortuous superficial vessels along the floor of the tube. The membrana tympani is nearly normal in its appearance; but there is slight milkiness of both. The case presents many of the signs given by Mr Toynbee as characteristic of anchyllosis of the stapes to the fenestra ovalis.

40. *Case of troublesome Tinnitus unconnected with visible disease in the Ear*.—David Macdonald, æt. 23.—Complains of a constant singing noise in the right ear, which becomes aggravated when he lies down at night. It came on first about a year ago after bathing, when he was deaf for about a week. It then left him for a time, occurring at irregular intervals. For the last six months, however, it has never ceased. He hears perfectly.

Nothing abnormal could be detected in the membrana tympani, and after a long attendance the noises remained exactly as at first.

41. *Hæmorrhage from the Ear in consequence of an Injury*.—Thomas Aird, æt. 70.—States that for many years he has had considerable dulness of hearing. About three months ago, he fell on the ice on his head, and was insensible for some hours afterwards. At the time there was a good deal of bleeding from the right ear. For some weeks he was nearly quite deaf on that side; but his hearing has gradually been returning, and he now hears almost as well as he did before the accident.

The membrana tympani is dull and white, but presents no appearance of any former rupture. There is a considerable piece of hardened clot still adhering to the floor of the meatus, and the superficial vessels in the meatus are seen to be large and tortuous. Apparently the hæmorrhage had come from the rupture of some of these vessels, though probably there had also been some effusion of blood into the cavity of the middle ear.

42. *Case of Polypus*.—Bernard MacGowan, æt. 16.—There is a large florid polypus projecting from the right meatus, accompanied by profuse discharge, which has existed for upwards of five years. It was easily removed by Wilde's snare; but the state of the deeper parts was not ascertainable owing to the bleeding. The hearing was apparently quite lost, and he did not again show himself.

43. *Congestion of Tympanum in consequence of Occlusion of Eustachian Tubes*.

—Mrs White, æt. 25; April 2.—Became rather suddenly deaf a fortnight ago, after a severe cold and sore throat. Complains of great pressure on the ears. The watch is only heard on placing it against the ear.

Both passages contain a good deal of soft cerumen. No improvement, however, followed its removal. Both membranæ tympani are of a dark, dull leaden colour. The triangular bright spot is very much enlarged, and the membrana tympani on both sides is very much driven inwards. Both Eustachian tubes are shut.

In the course of a fortnight several loud cracks took place in the ears, and were followed by the immediate return of the hearing. The feeling of pressure in the head disappeared at the same time.

44. *Abscesses in Meatus*.—James Wilson, æt. 21.—Has suffered for five or six months from a constant succession of small boils in the external meatus. The hearing is unaffected, unless temporarily from the swelling before the boil opens. There is also slight discharge from the meatus. The parts were washed occasionally with a twenty-grain solution of nitrate of silver. Slight external irritation was kept up for some weeks, and iodide of potass given internally. In the course of a month the parts had resumed their natural appearance.

45. *Catarrhal Inflammation of Tympanum—Partial loss of Membrane Tympani*.—Margaret Fairgrieve, æt. 4.—Has had profuse discharge from both ears since she was ten months old. Lately, there have been occasional discharges of blood, and she has become very deaf. She still speaks well, however.

The right meatus is much swollen and ulcerated at its orifice, in consequence of the irritation caused by the plug of cotton wool with which the ear is stuffed. It is full of thick cheesy discharge; the membrana tympani nearly removed, and the mucous membrane of the middle ear is red and swollen. The left meatus is in much the same state; the membrana tympani has a soft pulpy appearance and is fallen inwards; there is a large perforation in the anterior vibrating portion.

By the daily use of the syringe and warm water, slight external irritation, and the use of cod oil, the discharge in the course of two months had much diminished, the ulcerations healed, and the hearing had considerably improved.

46. *Chronic Inflammation of Meatus and Membrana Tympani*.—Anne Grieve, æt. 11; April 23.—Began to suffer from deafness in the left ear about five months ago, after an attack of earache. She has had occasional attacks of pain since then, and latterly, there has been a slight discharge. Hearing distance, five inches.

The meatus contains a good deal of thick cheesy matter; the membrana tympani is dull; numerous straight vessels run across it towards the centre; and it is very vascular along the course of the malleus, which is very prominent. Air enters the middle ear with a flapping sound, very unlike the normal crackle as heard in the other ear.

The meatus and membrana tympani were washed with a solution of nitrate of silver, fifteen grains to the ounce. She was directed to take the thirtieth of a grain of the bichloride of mercury twice a-day, and to paint over the mastoid process twice a-week with blistering vinegar.

May 21.—Has continued the above treatment till this date, except during an interval of ten days, when the mercury was omitted. The watch is now heard at the distance of four feet; the discharge has long ceased; the membrana tympani has regained its polish, but is still more concave than in the healthy ear. When seen some months later this patient heard quite well.

47. *Polypus—Great Thickening of Membrana Tympani*.—Hannah Johnston, æt. 17; April 9.—Has had discharge from the right ear for five or six years. It has never been entirely absent, and occasionally it has been profuse. Hearing distance, two inches.

There is a firm fibrous polypus growing from the middle of the posterior wall

of the meatus. It was removed by Wilde's snare, and came away entire. The membrana tympani is seen to be much thickened, and numerous enlarged vessels are seen ramifying upon its surface. The discharge soon ceased, and the membrana tympani was rubbed over from week to week with a solution of nitrate of silver, one drachm to the ounce. This was followed by a certain improvement in the hearing; but the exact hearing distance at the end of the treatment is not stated.

48. *Foreign Body in the Ear—Ulceration of Membrana Tympani.*—Thomas Sandeman, æt. 11.—About four months ago, came home from school, crying out with pain in one of his ears. A few days after, a discharge commenced, which has continued up till now. He is quite deaf in that ear.

On washing out the meatus there is discovered at the bottom of it a large bean, filling the canal so closely that its removal was attended with some difficulty. This was accomplished by first passing Wilde's snare over it, which cut it across, and then removing the halves separately. The membrana tympani was much inflamed and thickened, and, as well as the inner third of the canal, much ulcerated. In the course of a fortnight the parts had resumed their natural appearance, and the hearing was unaffected.

49. *Chronic Inflammation of Tympanum—Great Thickening of Membrana Tympani.*—Sarah Bryce, æt. 9; April 16.—Since a child she has been subject to attacks of earache; and some years ago had discharge from the right ear, which lasted for four months and ceased spontaneously. The deafness has been but slight till within the last eighteen months, since which period her hearing has become much affected. The hearing distance is half an inch on the right, and two inches on the left side.

The right meatus is dry and white; the membrana tympani very much thickened, having almost the appearance of a piece of ivory or bone. It is thickened very irregularly, and presents several spots of reflected light. Here and there are depressions as if ulcerations had formerly existed and had afterwards healed. It feels quite hard when touched with the probe, and about a line from its inferior margin is a belt of enlarged vessels. The thickening is greatest in the upper part of the membrane. The appearances in the left ear are somewhat similar, but the opacity is not so decided.

At the end of two months, very much to my surprise, the hearing had improved; the hearing distance being two feet in the right ear, and eighteen inches on the left. The treatment consisted in severe counter-irritation, mild mercurials, and latterly, iron and quinine. There was little apparent change in the membrane itself, the red zone of vessels had, however, disappeared.

50. *Case of Nervous Deafness.*—Helen Smith, æt. 20.—Deafness came on about four years ago, when she fell into a weak state of health and had much mental anxiety. In about a year she became as deaf as she is at present, requiring to be spoken to in a very loud voice close to the ear. She has a very anæmic appearance, and the catamenia have not appeared for the last four years. She suffers much from cold extremities; the tongue is red, hacked, and very irritable; and her appetite is capricious, and her digestion bad.

She has never suffered from tinnitus, and the watch is feebly heard only on pressing it against the ear. There is not on examination the slightest appearance of anything abnormal in either ear. The case appears to be one of weakness of the auditory nervous apparatus.

After six months' treatment her general health had much improved, but the hearing remained as before. A pair of Mr Rein's acoustic auricles was then provided for her, and with their assistance she was enabled to hear with comparative comfort.

51. *Chronic Inflammation of Membrana Tympani.*—Christina Pringle, æt. 26; April 16.—Has been gradually losing her hearing for the last eighteen months, has never had pain, and only occasional tinnitus; it is much aggravated when she gets cold, and latterly, she was unable to hear the bells ring in the house in which she was a servant, and lost her situation in consequence. With the

right ear the hearing distance is barely two inches, and little more than one inch with the left.

The meatus is dry; the right membrana tympani is more concave than natural, its upper portion thickened, dull, and white, numerous large vessels running along the manubrium of the malleus. The lower part is dull and concave. The appearances are much the same in the left ear; both Eustachian tubes are permeable.

A free discharge was kept up behind the ears, and one-sixteenth of a grain of bichloride of mercury given three times a-day. This treatment was persevered in for upwards of three months, with occasional intermissions of a week or ten days. There was no improvement perceptible for upwards of four weeks, when the hearing began to improve, and by the end of July the watch was heard at the distance of fourteen inches on the right side, and about twelve on the left.

52. *Case of Feigned Deafness (?)*.—George Scott, æt. 16.—States that during a quarrel with his brother five days ago his hearing suddenly left him. He says he does not hear the watch when applied to the ears or the temples, but only when placed on the crown of his head.

The meatus contains a good deal of very fluid cerumen, the removal of which did not improve the hearing; otherwise there is nothing abnormal to be seen. Both membranæ tympani are perfectly healthy.

He returned a week afterwards to say that his hearing had returned as well as ever. He had come a long distance from the country, and had remained in town during the week, and there was all along a strong suspicion that he was feigning deafness to serve some purpose of his own.

53. *Congestion of Middle Ear, and Thickening of Membrana Tympani*.—Janet Hay, æt. 11.—Got deaf after a cold in the head four weeks ago. Hearing distance, one inch and a half in the right ear, and upwards of two inches in the left.

The meatus is dry; the right membrana tympani is very much drawn inwards, so much so that the parts anterior and inferior to the tubercle of the malleus are invisible; the upper portion is dull, vascular, and thickened. The left is not so concave; but the polish is lost, and it has a dark colour, and many enlarged superficial vessels are visible. Both Eustachian tubes are shut.

After a month's treatment the hearing had quite returned.

54. *Chronic Thickening of Membrana Tympani—Occlusion of Eustachian Tubes*.—Anne McCall, æt. 50.—Has been dull of hearing for two years. Two months ago her deafness suddenly increased. At present the hearing distance is two inches on the right ear, and contact with the left.

Both membranæ tympani are considerably collapsed, and the triangular bright spot is much enlarged; there is a very distinct thickening of the inferior margin of both membranes, resembling the arcus senilis in the eye; the left membrane is much more uniformly dull than the right; the throat is red and swollen, and the Eustachian tubes both impermeable.

On the 20th of May the hearing distance had increased to three inches in the right ear, and two and a half in the left. Both Eustachian tubes are now permeable.

55. *Atheromatous Deposits in Membrana Tympani*.—Mrs Hay, æt. 45.—Has been gradually getting deaf for the last twelve years, and now only hears the watch faintly on pressing it against the ear. She can assign no cause for her deafness, for beyond suffering occasionally from rheumatism she has enjoyed good health. She has never had pain in the ears, and has all along been free from the usual distressing noises.

The right meatus is dry; its dermoid layer thickened; here and there are small nodules, like small exostoses of the size of pin-heads, projecting from the floor of the meatus; the membrana tympani is normal in its curvature. Posterior to the handle of the malleus there is an irregular triangular patch of deposit apparently atheromatous; its greatest length is about two lines, and it

is situated under the external layer of the membrana tympani. Anteriorly and superiorly there are two smaller patches of similar deposit; at the free extremity of the malleus there is a small portion of the membrane quite clear, the rest of it is opaque and milky. The left is more concave than natural, and more milky in appearance. Anteriorly there is a small nodule of deposit, and posteriorly there is a large patch of nearly the same size and occupying almost the same position as that in the other ear: it has a peculiar fringe-like margin. In this ear also, as in the other, the floor of the meatus has a rough nodular appearance.

56. *Loss of Membrana Tympani after Scarlet Fever.*—Charles Morrison, æt. 11.—Has had profuse discharge from both ears since an attack of scarlet fever eight years ago. The watch is heard at the distance of four inches.

The right membrana tympani is nearly removed, the left entirely so; the mucous membrane of the middle ear is comparatively healthy.

57. *Case of Deaf Mutism.*—Helen Lonic, æt. 4; a deaf mute.—She appears to be sensible of very loud noises. The right membrana tympani appears to be healthy; there is, however, considerable opacity of the left, and several large vessels appear coursing along the manubrium of the malleus.

58. *Chronic Inflammation of Tympanum and Membrana Tympani.*—James Hume, æt. 20.—Became deaf about three months ago after a severe cold. Has had no pain, but constant tinnitus. The noises are variable, most commonly like the rushing of water. Hearing distance, contact in both ears.

The meatus is dry, white, and smooth. The membrana tympani very much collapsed, and of a pearly white colour. Air enters the middle ear with a crackling sound. This patient did not return.

59. *Occlusion of Faucial Orifice of Eustachian Tubes—Congestion of Tympanum.* Mrs Davidson, æt. 30.—Rose quite deaf about a fortnight ago. The watch is only heard on pressure over the auricles.

Both membranæ tympani are dark and congested, and much collapsed; the light is reflected from nearly the whole surface of the membrane; throat swollen and red; both Eustachian tubes, but evidently only their faucial extremities occluded, from the thickened state of the mucous membrane. It was not, however, till three or four weeks after, that the air found its way into the tympanum, and the deafness disappeared as rapidly as it had come on.

60. *Loss of Membrana Tympani after Scarlet Fever.*—Margaret Oneless, æt. 6.—Has been very deaf since she had scarlet fever about a year ago. On examination both membranæ tympani are quite removed. The mucous membrane of the right tympanic cavity is natural, the left cavity is filled up with small polypoid growths.

61. *Loss of Membranæ Tympani after Fever—Polypus in left Ear.*—Mary Duncan, æt. 20.—Has had a copious discharge from both ears since childhood. In the right ear the membrana tympani is nearly destroyed, and in the left there is a large firm polypus filling up the meatus. On removing the polypus the membrana tympani was found to be entirely absent, and the mucous lining of the tympanum much thickened.

62. *Eczema of Auricles.*—Elizabeth Elder, æt. 20.—Has suffered for three months from a thickened and eczematous state of the auricles. The hearing is unaffected. After a few washings with a twenty-grain solution of the nitrate of silver the symptoms disappeared.

63. *Catarrh of Tympanum.*—George Richardson, æt. 26; May 7.—After a severe cold, six weeks ago, suddenly lost the hearing in the left ear. The right afterwards became affected, but the dulness came on gradually. At present the hearing distance is contact in both ears. Both membranes were found on examination to be very concave, and of a dark, dull leaden colour. The triangular bright spot was very large. The throat was much swollen and red; and though air was heard occasionally to enter the middle ear, it passed with

difficulty; and with a gurgling or squealing sound, as if there was a collection of mucus in the tympanic cavity.

In the course of a week crackings took place in the right ear, which were followed by a return of the hearing to a considerable extent. Soon after the same took place in the left ear, and by the beginning of June his hearing was as usual.

64. *Rupture of Membrana Tympani*.—James Adam, æt. 23; May 7.—A fortnight ago, while blowing his nose, having at the time a cold in the head, felt a sensation of something bursting in the ear. This was followed by discharge from the ear, and for the last two or three days there has been considerable pain.

The meatus contains a good deal of mucous discharge, on removing which there is seen to be a rupture in the membrana tympani, the aperture extending from the tubercle of the malleus downwards to about half-way between it and the inferior margin of the membrane. The edges of the opening were washed with a weak solution of nitrate of silver, and in the course of ten days the aperture had closed.

He returned on the 28th, having got a fresh cold, with pain and discharge from the ear. The opening had increased in size and the edges were thickened; the rest of the membrana tympani was also red and inflamed. Two leeches were applied to the orifice of the meatus, and a blister over the mastoid process, and the ear was kept carefully clean by means of the syringe. After six weeks the opening had again closed, but the membrana tympani had fallen in towards the promontory, and the watch was only heard at the distance of four inches from the ear.

65. *Chronic Inflammation of Meatus and Membrana Tympani*.—Mrs Watt, æt. 50. Has been dull of hearing for many years. Within the last six months has got very deaf, and suffers from great itchiness of the ears, with slight clear discharge. On inspection the walls of the meatus were found to be in a state of chronic inflammation, and to contain much thickened cuticle. The membrana tympani were also much thickened and white. The unhealthy state of the meatus was improved, and the itchiness relieved by a few washes of a twenty-grain solution of the nitrate of silver, and considerable improvement of the hearing followed, the precise hearing distance, however, not being stated.

66. *Complete Deafness after a Fever*.—John Melvin, æt. 5; a deaf-mute; a healthy-looking child, of healthy parents.—He heard quite well, and was speaking pretty distinctly till about two years ago, when he had a fever; which, his mother says, went to his brain. When he came out of the fever he was observed to be deaf, and latterly he has lost what speech he had. On examination both membrana tympani are seen to be perfectly healthy.

67. *Polypi in both Ears—Loss of Membrana Tympani*.—John Parker, æt. 21.—When six years of age had scarlet fever, followed by measles. Since then he has been very deaf, and has had a profuse discharge from both ears. From time to time for many years back, pieces of polypi, as they appeared externally, have been extracted by various surgeons in different parts of the country, but the benefit derived from their removal has always been very temporary. He is by trade an engineer, and suffers so much from giddiness, that he is unfit for any work which requires his ascending any height. Even when a few feet above the ground, he is afraid of falling. He has also severe attacks of pain in the ears and head when the discharge does not readily escape. The amount of matter discharged is very great. He thinks it must amount to several ounces a-day. At present the hearing distance is contact on both sides, and he requires to be spoken to in a loud voice within a foot of his head ere he can hear.

Both passages were filled with masses of firm polypi. These were removed as much as possible from week to week till the meatus was pretty well cleared in both ears. What remained was touched generally with the solid nitrate of

silver, sometimes with the strong nitric acid. He attended the dispensary regularly once a-week, coming a long distance from the country, and at the end of six months he was much improved. The hearing distance of the left ear had increased to fourteen inches; the meatus was cleared of the polypi, and the mucous membrane of the middle ear was in a healthy state; the discharge had much diminished, and was merely slightly mucous, requiring the use of the syringe only once in the two days. The right meatus was in a healthy condition, but part of a firm polypus still remained growing from the tympanic cavity; the hearing distance was four inches. The giddiness had completely disappeared, and for some time he had been at work, at a height of thirty or forty feet without feeling the least inconvenience.

68. *Catarrh of Tympanum, with discharge through the Membrana Tympani*.—Jessie Blake, æt. 2.—Has had discharge from the right ear for three months. The meatus is much swollen, and will not admit the smallest speculum; but amongst the discharge there are several small air-bells, showing that the membrana tympani is perforated.

Daily syringing with warm water was recommended, with slight counter-irritation behind the ears. The child was only brought back once, about a month afterwards, when the mother stated that the discharge was gradually diminishing.

69. *Thickening of Tympanum and Membrana Tympani*.—Robert Scott, æt. 17.—Used to suffer much from earache when a child, and has had a discharge from both ears since he was ten years old. Hearing distance, two inches on the left, and contact on the right side.

The right membrana tympani is coated with thick viscid discharge, and is red and granular; its anterior margin is densely opaque, and the whole fallen inwards. The left is very much thickened, and very concave, and evidently lying against, probably adherent to, the promontory. No air enters the left tympanic cavity. The right Eustachian tube is free, and the air enters with a sort of flap. This patient was not again seen at the dispensary.

70. *Great Concavity of the Membrana Tympani*.—Mrs Jack, æt. 40.—Has gradually lost her hearing during the last twenty years; now she requires to be spoken to in a very loud voice. She has never had any pain or tinnitus, but her voice is now harsh and inharmonious.

The meatus and its secretions are natural; the membrana tympani very much collapsed, but, otherwise, apparently quite healthy. Air enters the middle ear quite easily, but beyond the great concavity of the membrane, nothing abnormal can be detected. For such cases nothing can be recommended save an ear-trumpet.

71. *Loss of Membrana Tympani after Fever*.—John Gardner, æt. 19.—Has had discharge from both ears since an attack of fever fourteen years ago. The hearing distance is two inches and a-half on the right side and four on the left.

Both membranes are much thickened, and the posterior and inferior portion of both—amounting to nearly one half of the membrana tympani—is removed. Neither the artificial membrane nor the moist cotton increased the hearing in the slightest degree.

72. *Chronic Inflammation of Membrana Tympani*.—John Dove, æt. 43; May 21.—Has been dull of hearing, with very constant and troublesome tinnitus in the left ear, for four or five months. The hearing distance is four inches. The membrana tympani is much thickened and dull, and there is no bright spot of reflected light. The thickening is irregular, giving the membrane a mottled appearance, and there is a small patch of atheromatous deposit near the middle of its anterior margin. The Eustachian tube is impervious, and the throat swollen.

A month afterwards the hearing had increased to two feet, and the noises had almost disappeared; the treatment pursued having consisted in blistering, and small doses of mercury with quinine.

73. *Chronic Inflammation of Tympanum*.—Michael Divine, æt. 7; May 21.—Has been deaf for a month. Hearing distance, contact on both sides. Has a remarkably heavy stupid look, and labours under well-marked chorea.

Both membranæ tympani are dull, dark, and concave. The tonsils are large; and both Eustachian tubes are occluded. Under the use of the ammonio-sulphate of copper, the choreic symptoms disappeared in about a month; the hearing, however, was not quite restored till about two months afterwards, the thickened state of the fauces and the enlarged tonsils for long retarding the cure.

74. *Partial Loss of Membrana Tympani after Fever—Catarrh of Tympanum*.—Anne Dewar, æt. 12.—Has been deaf for seven years, since an attack of fever. The hearing distance is contact on the right, and four inches on the left side.

The right meatus is much thickened and full of thickened dermis. There is a large aperture in the membrana tympani. In the left there is a small aperture in the middle of the anterior vibrating portion.

75. *Case of Nervous Deafness*.—Mrs Scott, æt. 40.—Has been losing her hearing for the last three years. It is now quite gone in the right ear, and nearly so in the left. The patient is a thin, broken-down, delicate-looking woman, and has had a very large family. Her tongue is red and irritable, and she suffers much from dyspepsia and general ill health.

There is nothing abnormal visible in either ear, the membrana tympani being perfectly healthy in both.

76. *Loss of Membranæ Tympani*.—John Kirk, æt. 21.—Since his childhood has had discharge from both ears. On inspection, both membranæ tympani are seen to be very much destroyed,—the right almost entirely, and about the inferior half of the left. At the bottom of the left meatus are several small polypoid excrescences, which were destroyed by the nitrate of silver. The artificial membrana tympani was of no benefit in this case.

77. *Polypus in Right Ear*.—Arch. Beith, æt. about 40.—Never remembers to have heard with the right ear. About four years ago had discharge from it, which after a short time ceased spontaneously. Since then has had occasional attacks of discharge, but for the last six months it has been constant and occasionally slightly bloody.

A large firm polypus was found filling up the right meatus. It was attached by a broad base to the middle of the posterior wall of the canal. It was removed by Wild's snare, and came away entire. In the course of a week the discharge had quite ceased, and the watch was heard at the distance of four inches, though before the removal of the polypus it was inaudible on pressing it against the temple or external ear. When last seen, a few weeks ago, the hearing distance was twelve inches, notwithstanding that he had a severe cold at the time. The membrana tympani still remained much thickened.

78. *Great thickening of Membrana Tympani*.—Alex. Stewart, æt. 62.—Has been getting deaf for the last fourteen years. Watch heard on pressure. The noises are very troublesome and constant.

The meatus is dry, smooth, and white. Both membranæ tympani are densely opaque, and much collapsed, and there are no remains of vascularity even along the course of the malleus. It is evidently not a case to be benefited by any kind of treatment.

79. *Abscess in Anterior Wall of Meatus*.—Margaret Meek, æt. 12.—Has had severe pain in the ear for the last three weeks. There is seen projecting from the meatus a bright red tumour that at first sight looked like an old standing polypus. It is, however, an abscess in the anterior wall of the meatus. It was opened with relief to the pain, and there was no disease of the deeper parts.

80. *Occlusion of Eustachian Tubes—Congestion of Middle Ear*.—John Goodfellow, æt. 37.—Lost his hearing quite suddenly in the right ear, a fortnight

ago, and in a few days the other became similarly affected. Hearing distance, contact.

The right membrana tympani is dull and vascular, especially along the course of the malleus, and more concave than natural. The left is of a dark leaden colour, and much fallen inwards; the meatus is dry and red at its inner part. The throat is swollen and thick; both Eustachian tubes occluded.

About ten days afterwards the hearing began to improve, and in the course of a month it had quite returned.

81. *Ossaceous Tumour in Meatus, Chronic Inflammation of Meatus*.—Mrs Sinclair, æt. 58.—For several years has suffered from a swollen and irritable state of the left ear, with great heat and itching in the meatus, and very distressing noises; especially she complains of a sort of reverberation in her head. The watch is heard on contact.

On looking into the meatus, after clearing it of a mass of thickened cuticle, it seemed at first as if the upper part of the membrana tympani was removed. On more careful examination, however, this appearance was seen to be caused by a thin ridge of bone, which arose like a curtain from the floor of the meatus, about two lines in front of the membrana tympani, and concealing all except the upper fourth of the membrane. This shell of bone was very thin and remarkably sensitive. Behind it were several pieces of thickened dermis, which were removed by the forceps and syringe. The meatus and auricle were washed several times with a twenty-grain solution of nitrate of silver, and afterwards the weak citrine ointment was put in occasionally with a brush. At the end of a fortnight the heat and itchiness had disappeared. The tinnitus had also ceased, and she heard as well as ever. When seen some months afterwards, the shell of bone remained as before, and gave no inconvenience.

82. *Inflammation of Mucous Membrane of Tympanum*.—Catherine Campbell, æt. 8; June 11.—Has had attacks of earache in both ears occasionally during the last fortnight. Since last night the pain has been very severe.

The meatus is red and tender at its inner third. The membrana tympani is of a dusky red colour—especially along the course of the malleus. The right is concave, the bright spot large, and the whole membrane presents an almost black appearance, owing to great congestion of the membrana tympani and middle ear. Both Eustachian tubes are shut.

The application of a leech to the surface of each meatus, followed by blisters, removed the pain, and the hearing gradually improved, and by the end of five weeks the hearing was quite restored.

83. *Chronic Inflammation of Membrana Tympani*.—William Macphail, æt. 13; June 11.—Got a severe cold about five months ago, and has been deaf since. The hearing distance is one inch in the left, and two inches and a half in the right ear.

The meatus in both ears is somewhat thickened and red, especially towards the inner third, where there is great vascularity. The upper part of the left membrana tympani is very opaque and thickened,—the manubrium of the malleus stands out very prominently. The inferior portion of the membrane is drawn inwards, and numerous large vessels are seen ramifying on its surface. The right membrana tympani presents nearly similar appearances, but there is less lymphic deposit in it than in the left. The tonsils are very large; the mucous membrane of the fauces is thick and red. The Eustachian tubes are permeable, but the air enters the middle ear with difficulty and only occasionally.

The tonsils were removed. Small doses of the bichloride of mercury were given along with the muriated tincture of iron, and free counter-irritation was applied behind the ears. In about three weeks symptoms of improvement showed themselves. By the middle of July the watch was heard at the distance of six inches from the right ear, and eight inches from the left. By the end of October the membrana tympani had nearly cleared, and the watch was heard at the distance of five or six feet on either side.

84. *Chronic Inflammation of Membrana Tympani*.—William MacDonald, æt. 13.—Has been deaf for about four years. The deafness was preceded, and has frequently been followed, by attacks of pain in the ears. The hearing distance is contact on the left, and half an inch on the right side.

The meatus is dry in both ears; the right membrana tympani is thickened; the thickening is irregular, giving the membrane a mottled appearance. Many enlarged blood-vessels are seen ramifying on its surface, especially along the course of the malleus. The left has much the same appearance, if anything it is more dense and white than the other.

By the beginning of October the hearing had improved so far that the watch was heard at the distance of eight inches from the left ear and sixteen from the right. In consequence, however, of having remained for upwards of an hour in the swimming-bath he got cold, and had another acute attack of pain in both ears; and at present his dulness of hearing is as great as when he first came under treatment.

85. *Deafness following an Injury of the Head—Great Tinnitus and Opacity of the Membrana Tympani*.—Mrs Stark, æt. 52.—Complains of deafness, with very distressing noises in the right ear; the hearing of which is gone. She states that last January she fell on the ice, and at the time there was great bleeding from the ear. She remained insensible for four hours, and for several weeks afterwards had great giddiness in the head.

The membrana tympani is uniformly white; but there is no appearance of any old cicatrix, or of the membrane having sustained any injury. On the floor of the meatus are numerous large superficial vessels, and there is still a small hard clot adhering to the dermis. The examination of this case was made rather hurriedly, and the patient was requested to return, but she failed to do so.

86. *Thickening of Tympanic Cavity and Membrana Tympani*.—Richard Sleigh, æt. 7.—Has been deaf for the last two years. The deafness was preceded by severe attacks of earache. He is a very delicate-looking, fair-haired, nervous boy from the country. During damp weather, or on the least exposure to cold, he becomes so deaf that he requires to be spoken to quite close to the head.

Both membranes are dull, of a dark red colour, and very concave. The Eustachian tubes are permeable; but there is great gurgling as the air enters the cavity of the tympanum. The tonsils are large, and the throat thick and swollen. This patient was not again seen, though his case was a very favourable one for treatment.

87. *Inflammation of Meatus and Membrana Tympani caused by the introduction of some irritating substance into the Ear*.—Jane Anderson, æt. 19.—A week ago when suffering from severe toothache, was recommended to put into the ear some drops of a so-called specific for toothache, manufactured by a druggist at Burntisland. This she accordingly did, and was almost immediately seized with intense pain in the left ear. This continued for three days, when the pain was relieved by a profuse discharge from the ear. The watch is only heard on placing it against the auricle.

The meatus is swollen and tender, containing a thin discharge, with masses of thickened cuticle; the external layer of the membrana tympani is seen to be much thickened, with large patches of lymph effused on its surface.

In the course of a fortnight the parts had resumed their natural appearance, and the hearing had returned. The substance dropped into the ear appears to have been a strong solution of camphor in alcohol. This is the third case in which I have seen acute inflammation of the ear set up by the same specific for toothache introduced into the ear.

88. *Great Opacity with Atheromatous Deposit in Membrana Tympani*.—Margaret Whitehead, æt. 35.—Has been deaf for the last ten years. The watch is unheard unless when pressed upon the auricles. On examination the right membrana tympani is seen to be very dense and white; and owing to the great thickening the handle of the malleus is scarcely distinguishable. In the

left, in addition to a similarly diseased state of parts, there is a large patch of atheromatous deposit.

89. *Chronic Inflammation of Tympanum*.—David Aigle, æt. 13.—Has been getting deaf for six or eight months. The watch is heard half an inch from the right ear, and on contact with the left. Both membranæ tympani are dull, thickened, and concave; the triangular bright spot is large and elongated; the tympanum is uninflatable.

On the 2d July hearing had begun to improve; the watch being heard at two inches from the left, and nearly four from the right. After that he ceased attendance.

90. *Chronic Inflammation of Meatus and Membrana Tympani*.—William Heriot, æt. 7.—About ten months ago had severe pain in the left ear, which was followed by discharge. This has continued since then. Hearing distance, four inches.

The meatus is thickened, and contains a thin milky discharge and masses of thickened epidermis. Several small polypi, or rather granulations, are growing from the posterior wall of the tube near the membrana tympani. The membrana tympani is dull and thick.

The meatus was washed two or three times with a twenty-grain solution of nitrate of silver, and free external counter-irritation was kept up for a long time. When seen a few weeks ago the hearing had returned, and the membrana tympani had quite regained its translucency.

91. *Inflammation of Meatus after Bathing*.—John Smith, æt. 12; June 26.—A fortnight ago, after bathing, was seized with severe pain in both ears. This continued for several days, and was followed by deafness. Hearing distance, two inches.

Both canals are dry and tender; the membranæ tympani of a deep red colour. Eustachian tubes pervious; but there is great gurgling as the air enters the middle ear, as if there was mucous engorgement of the tympanum. The application of a leech to each meatus, fomentations, and two or three blisters, were followed by a return of the hearing in about a fortnight.

92. *Mucous Accumulation in Middle Ear*.—Simon Fraser, æt. 32; June 26.—For the last ten days has had dulness of hearing, with confusion in the head, and a feeling of pressure on the right ear. Hearing distance, ten inches.

The meatus is very large and dry; the membrana tympani of a dark leaden colour, and much more concave than natural; air enters the middle ear with a gurgling sound; the throat is swollen and red. The fauces were touched with a forty-grain solution of nitrate of silver, and slight counter-irritation prescribed, along with a tannin gargle for the throat; and in the course of ten days the symptoms had disappeared.

93. *Catarrhal Inflammation of Middle Ear*.—John Veitch, æt. 28; June 26.—About two years ago had slight discharge from the left ear, and after continuing a few weeks it ceased spontaneously. A fortnight ago, after bathing, was seized with acute pain in the ear, which in two days after was followed by profuse discharge and great deafness. Hearing distance, contact.

The meatus is swollen and full of discharge; the membrana tympani is of a bright red colour, and there is a minute perforation near its anterior margin, where there is a strong pulsation, and where mucus is seen, being pumped through from the middle ear. This patient was not seen again.

94. *Chronic Inflammation of Meatus*.—Peter Carmichael, æt. 35; June 26.—For four or five months has suffered from intense itching deep down in the ear. Latterly there has been a slight discharge.

On removing the muco-purulent discharge with which the meatus and membrana tympani are coated, the latter is seen to be very vascular, almost granular in appearance; the inner third of the meatus is also red and somewhat thickened. Hearing distance, six inches.

The membrana tympani and deep part of the meatus were washed with a

solution of nitrate of silver, sixty grains to the ounce. This was repeated once or twice, by which time the discharge had ceased, and along with it the irritation and itching in the ear. External irritation was continued for some weeks, and the hearing became quite restored.

95. *Loss of Hearing after Scarlet Fever—Membrana Tympani destroyed.*—Jane Cunningham, æt. 21.—Lost her hearing fourteen years ago after scarlet fever. Since then has had a constant discharge from both ears. On examination both membrana tympani are quite removed,—apparently also the small bones of the ear. The hearing is almost quite gone.

96. *Suppuration of Ear from introduction of Oil of Turpentine into Meatus.*—David Craig, æt. 20.—About four years ago had a slight earache, for which he was recommended to put into the ear some oil of turpentine. This was followed by severe pain and profuse suppuration, and for some time by complete loss of hearing. At present the hearing distance is four inches.

The membrana tympani is nearly removed, a small rim only being left. The mucous membrane of the middle ear is swollen and red. This was washed several times with a twenty-grain solution of the nitrate of silver; and, with the daily use of the syringe, in the course of three or four weeks the discharge had ceased. The artificial membrana tympani of Mr Toynbee, when introduced, answered remarkably well, increasing the hearing distance to upwards of three feet. The patient, however, would not take the trouble to use it; for, as he said, he heard quite well with the other ear and was satisfied with having got quit of the discharge.

97. *Inflammation of Tympanum.*—Jane Colvin, æt. 11; a fair-haired, delicate-looking girl.—Has had severe earache every night for the last three weeks. Hearing distance, contact. The membrana tympani on the affected side is dull, and has a swollen appearance. A few days after there was a slight discharge from the ear, which relieved the pain; there was not, however, any aperture in the membrana tympani. In about ten days the discharge ceased, and the membrana tympani was left much thickened, and two months afterwards the watch was only heard at the distance of two feet.

98. *Occlusion of Eustachian Tube.*—John Mackay, æt. 40.—Has been dull of hearing for several weeks. Within the last week has got very deaf in the left ear, with a feeling of fulness and pain on that side of the head. Hearing distance, one inch and a-half.

Both passages are full of soft cerumen, on removing which the hearing is restored in the right, but not in the left ear, the membrana tympani of which is seen to be of a dark leaden colour, very concave, and reflecting light from nearly its whole surface. The left Eustachian tube is impermeable.

A blister behind the ear relieved the pain in the head, and in about ten days air passed freely into the tympanum, and the hearing returned.

99. *Acute Inflammation of the Tympanic Cavity, extending to the Periosteum over the mastoid region—Bell's Paralysis, etc.*—Donald Munro, æt. 30.—The details of this case are not now given, as it is intended to publish it with some others of a similar nature afterwards.

100. *Catarrh of Middle Ear, with discharge through the Membrana Tympani, after Measles.*—William Young, æt. 13. Has had discharge from one ear for the last seven weeks. It came on after acute pain during his convalescence from measles. Hearing distance, half-an-inch.

The meatus is swollen, and contains large flakes of detached cuticle. The membrana tympani is very red, and has a small perforation near the centre of the anterior vibrating portion, through which a muco-purulent discharge comes from the middle ear.

By the daily use of the syringe, an occasional washing of the meatus and membrana tympani with a weak solution of nitrate of silver, and mild counter-irritation, the parts gradually resumed a healthy appearance; the opening in the membrana tympani closed, and in six weeks the hearing was restored.

ARTICLE VI.—*Half-Yearly Report of Cases occurring at the Edinburgh Eye Infirmary, 140 George Street.* By BENJAMIN BELL, F.R.C.S.E., and PATRICK HERON WATSON, M.D., F.R.C.S.E.

July 1, to December 31, 1861.

Tumours of Eyelids,	9
Wounds, Inflammation, Abscess of Do.,	7
Hordeolum,	6
Ophthalmia Tarsi, etc.,	20
Inversion of Eyelids,	2
Eversion of Eyelids,	1
Trichiasis,	1
Ptosis, Affection of Third Nerve,	2
Epiphora,	8
Do. from Everted Punctum,	1
Inflammation of Lacrymal Sac, Fistula, etc.,	9
Strabismus,	8
Wounds of Conjunctiva, Foreign Bodies under Lids,	13
Pterygium, Fatty Tumours of Conjunctiva, etc.,	2
Inflammation of Conjunctiva, Acute,	36
Do. do., Chronic,	36
Do. do., Catarrhal,	1
Do. do., Strumous,	12
Do. do., New-born Infants,	6
Do. do., Muco-purulent,	1
Do. do., Phlyctenular and Pustular,	29
Do. do., Catarrho-rheumatic,	1
Granular Conjunctiva of Palpebræ,	5
Wounds of Cornea, "Fires," etc.,	29
Inflammatory Affections of Cornea,	21
Abscess of Cornea, Hypopion,	3
Ulcers, Vascular Speck of Cornea,	26
Opacities of Cornea,	14
Staphyloma,	4
Wounds of Iris,	1
Inflammation of Iris,	2
Do. do., Syphilitic,	3
Synechia, Anterior and Posterior, Opacities of Capsule,	11
Cataract, Idiopathic,	13
Do. Congenital,	1
Dislocation of Lens, Spontaneous,	1
Myopia,	1
Presbyopia,	1
Asthenopia,	11
Nyctalopia, or Day-blindness, partial,	2
Amaurosis, Glaucoma, Retinitis, etc.,	23
Cases not classified,	11
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Part Second.

REVIEWS.

Homœopathy as Practised in Manchester, Contrasted with its Alleged Principles. By WILLIAM ROBERTS, B.A., M.D. Manchester: Kelly. Pp. 84. 1862.

No system of quackery was ever put down by argumentation. There appears to be in the human mind an inherent love of being deceived,—a tendency which manifests itself under all conceivable circumstances, but never more strongly than in matters connected with the preservation or restoration of health. Accordingly, we find that no dogma is too preposterous, no system of therapeutics too absurd, to prevent it from being accepted by numerous and enthusiastic adherents. And among these adherents will be found, not merely the ignorant and ill-informed, but those who, from their education and intelligence, might have been supposed beyond the danger of being carried away by a popular fallacy. In addition to the large class of hypochondriacs who are constantly occupied with the state of their health, and are ready to embrace every pretentious novelty, there are numerous estimable individuals prepared to become the victims of every delusion, who in such matters never think for themselves, but follow the fashion in medicine, just as they are guided by popular opinion in selecting the pattern of their coat, or in regulating the dimensions of their crinoline.

Homœopathy, it must be allowed, is most ingeniously adapted to attract all classes of minds. It presents a general principle to the philosophical; it offers a simple and inviting system of treatment to the practical; while it contains enough of the marvellous to fascinate the romantic and imaginative.

The doctrine, *Similia similibus curantur*, commends itself at once. One of the most characteristic tendencies of the human mind is the desire of unity, and a wide generalization is far more imposing than a whole host of isolated principles. In this respect homœopathy appears to the uninitiated vastly superior to rational medicine. Medicine has made great progress; but this very progress has rendered it evident that we can never expect to discover any system of therapeutics which shall be based upon a single formula. But the non-professional inquirer cannot understand this: when solemnly assured that the principle, *Like cures like*, is of universal application, he remains silent and satisfied.

There is no question but that the system of dosing was formerly carried to excess. Blue pills and black draughts cannot be called agreeable medicines, either while being swallowed, or while pro-

ducing their physiological or therapeutic effects; and there is no wonder that a system, whose whole pharmacopœia can be carried about in a pocket-case, and whose doses consist of tiny globules or tasteless fluids, should have sprung at once into popularity.

Then, too, the natural craving after the marvellous is gratified. Even the most credulous could scarcely have believed that the millionth of a grain of oyster-shell, or the thirtieth attenuation of vegetable charcoal, could produce any effect on the constitution; but here steps in the *deus ex machina*, the doctrine of potentization or dynamization, which declares that, by certain mysterious attritions or succussions, the hidden virtues of drugs are elicited, and that what if taken in the crude form would produce little more effect than inert matter, becomes, after the due number of rubbings and shakings, invested with unexpected and even tremendous potency.

There is also in mankind a strong tendency to doctor one another. This was sufficiently manifest even when Buchan was the standard authority, and the domestic pharmacopœia contained nauseous and active drugs; but the desire to gratify this inclination became positively irresistible when the diagnosis of a disease was reduced to fixing upon its most prominent symptom, and therapeutic means were devised of such a nature, that a dose which did no good could not at all events do any harm. A whole host of male and female amateur physicians were called into existence, who were ready on the shortest notice to prescribe *nux* for headache, *aconite* for feverishness, and *pulsatilla* for indigestion. There is no wonder, when all these things are taken into consideration, that homœopathy has had its day, and that day has been a long one.

But with all these circumstances in its favour, homœopathy would not have prospered as it has done, if it had been fairly practised. In many chronic ailments, and even in some acute diseases, the less medicine a patient takes the better; diet, regimen, and the *vis medicatrix* will do all that is required. But it is not always so; cases constantly occur where active interference becomes an absolute necessity. Infinitesimal doses are of course synonymous with no treatment at all; and if homœopathy were fairly practised, we verily believe that it would not last twelve months. The follower of Hahnemann is not, however, to be baffled in this way: he can confine his attenuated doses to chronic and trivial cases, while in serious cases he can give his patients (with or without their knowledge) real active medicines. This mode of procedure is carried on to a very great extent, and, though highly dishonest, has unquestionably been the means of upholding homœopathy. The homœopath justifies his deviations from the original principles of his system, by saying that he is a medical eclectic, that his own system of therapeutics is not yet perfect, and that a few curative agencies are to be found amid the rubbish of what he calls allopathy. But this is ridiculous: the doctrine of infinitesimal doses is a fundamental principle of homœopathy,—it is that which is best known and most

fully appreciated by the public, and when active medicines are given to the patient, they are generally administered without his knowledge. A practitioner of homœopathy *pure et simple* is, we take it, a *rara avis*; did we meet such a man, though we might despise him intellectually, we should respect him morally. We regard with very different feelings those who, while enjoying the prestige of practising one system, do not hesitate in an emergency to borrow from another, which it is their constant and avowed object to bring into contempt. Patients, we have said, are generally ignorant that their treatment is often the reverse of homœopathic; but even if they knew it, we question whether this knowledge would open their eyes to the delusion. Those who have been deceived do not like to acknowledge their simplicity; and in the case we are considering they really do not see the absolute incompatibility of rational medicine and homœopathy. It is a very common remark, "We employ so and so, because he knows both homœopathy and allopathy, and so he can choose the good from each system." This is all very well for the non-professional world; but we have no hesitation in saying, that any physician who simultaneously practises both systems is not an honest man.

These preliminary observations have detained us too long from the work before us. Dr Roberts has published an excellent little volume, descriptive of the condition of homœopathic practice in Manchester. His object in writing it we shall give in his own words: "I was led," he says, "into this inquiry by circumstances that occurred fortuitously in my own experience; and which made a deep impression on my mind. I fell in with patients who had been under the care of homœopathists, but who, I found, had been treated in the usual way; and the patients so treated had not the slightest suspicion that they had not been treated homœopathically. One case in particular struck me. A young man with epilepsy put himself under the care of a homœopathist in this town, and was reported to me as having derived great benefit from homœopathy. But many months afterwards, I discovered that the medicine he had been taking was three grains of phosphate of zinc three times a-day!"

In the first chapter, Dr Roberts shows, by the publication of facsimiles of actual prescriptions, that homœopathic practitioners by no means limit themselves to infinitesimal doses; and he informs us that in fifty-three out of the sixty-seven so-called homœopathic prescriptions he has collected, the amounts ordered are palpable quantities, if not full ordinary doses. Of course it would not do for the patient to know that he is not being treated according to the rules of Hahnemann; accordingly, in writing prescriptions, the homœopath "usually adopts a method which is incomprehensible to the ordinary druggists, by which large doses of powerful medicines may be, and are, prescribed in perfect concealment." This method consists in ordering the mother tincture, which in prescriptions is indicated by a peculiar symbol; in giving the first dilution (containing one part of the medicine, and ninety-nine parts of the

menstruum), which, on account of its too great strength, was never prescribed by Hahnemann; and in the introduction of two new attenuations indicated by the letters **A** and **B**, which contain, respectively, the tenth and the thousandth part of the pure drug. The second of these attenuations would require to be frequently repeated in order to produce any appreciable effect; the first is a very convenient form for administering active medicines.

In the second chapter, Dr Roberts shows that the law *Similia similibus curantur* is not true; that by some of the leading homœopaths, their own much-vaunted provings have been pronounced fallacious; and that, as proved by their own prescriptions, the law is constantly violated.

The third chapter treats of the literature of homœopathy. Dr Roberts shows that the writings of the followers of this system, like those of all other empirics, deal in marvellous and impossible cures; that their works are written not with a view to convince the intelligent, but to persuade the uninstructed; and that, while the popular literature shows a perfect and charming concord, writings not meant for the public eye, such as reports of discussions in the congresses of homœopathic practitioners, exhibit the existence of disagreement in the most fundamental points. "Harmony and unanimity are no longer visible; in their stead reign discord and contradiction."

Dr Roberts' book is written in calm and temperate language; homœopaths are judged by their own works, and on their own pretensions; and we feel sure that no one whose mind is not hopelessly warped by prejudice, will rise from a perusal of its pages without being satisfied that homœopathy is a delusion in its principles, and a system of deception in its practice. Let any thinking man who has felt attracted to homœopathy reflect on the following sentence:—"The history of homœopathy has been a remarkable one; it is the exact reverse of the history of every really great discovery, which begins as a germ and expands into a tree. Hahnemann introduced his system to the world as a full-blown flower; but after his departure it neither preserved its bloom nor swelled into fruit. On the contrary, one by one its petals dropped, deeper and deeper rotted its core, until to-day there is little left of it but the scentless stem."

The Fourth Annual Report of the Ladies' Sanitary Association. Tracts by the Ladies' Sanitary Association. Published at the Association's Office, Princes Street, Cavendish Square, London. 1861.

AN Association having for its object the diffusion of sanitary knowledge commends itself, in an especial manner, to the sympathy and support of the medical man, whose best efforts are frequently rendered futile by the gross ignorance of those whom he is expected to cure, and whose chances of success would in every instance be greatly increased if he found in those with whom he dealt an

intelligent appreciation of the conditions necessary for healthy living, and which tend so strongly to assist remedial measures. This kind of knowledge, by no means general even among the rich and educated, is of course still more deficient in the case of the poor; and the "Ladies' Sanitary Association" aims specially at the enlightenment of the humbler classes, chiefly by means of lectures and the distribution of tracts. It is hardly possible, we think, to speak too highly (in view of the objects intended) of the kind of literature which this Association disseminates. Its numerous tracts—sound, vigorously written, and eminently practical—are so different from the twaddle which is too often proffered as the right thing for the working class, that we feel sure they must be read with relish and acceptance.

The physical condition of our lowest poor, especially in large towns, is so lamentable, the difficulties by which they are surrounded are so numerous and so great, that all who have seen them as they are must feel how impossible it is to hope for moral elevation in such circumstances. By whatever means improvement is to be effected, the first step in the process is thoroughly to convince those who are most concerned of the dangerous agencies by which they are surrounded, and of the inestimable value of better dwellings, cleanliness, and pure air. The ignorant are naturally unable to believe in a benefit from which they can see no immediate result. And we may transfer a degraded family from a den of filth and misery to the most complete and convenient dwelling that sanitary science can devise, only to find every provision for comfort and decency neglected or despised, and the most perverse ingenuity exercised to bring evil out of good.

Some of the tracts of the Association are intended for the guidance of those who labour amongst the poor, and one of these, entitled "The Health of the Parish," is a most valuable exposition by Mr Drink of the mode of operation in the metropolis of the modern acts of parliament which have sanitary improvement for their object. The provisions of these acts seem most complete and satisfactory, and it is difficult to understand why, but for the supineness of communities, every city and town should not have these provisions rendered legally operative and efficiently carried out. As Mr Drink says, "It ought to be known that, for the future, by the Local Government Act (1858), any town or village whatever may acquire the necessary powers, if a majority of the owners and occupiers of property therein concur in the demand, and may elect representatives who will form local boards, invested with powers of public improvement, preservation of the public health, and other functions of self-government."

This Association, we think, performs its work all the better that it is a "Ladies'" society. Many of the details and specifications of suggestion would never have occurred to masculine intelligence,—as, for instance, how to dress a baby, and other hints as to clothing and food. The organization and management seem excellent; and

the only remark we would make in the way of criticism, or rather of advice is, that it would be a pity to deteriorate the character of its literature by seeking to multiply it beyond what its nature really admits of, and that as the work is of the sort which can quite well be performed by a central body, it will be most judicious in most cases rather to use existing organizations for the diffusion of its tracts and lectures, than to multiply branch associations. Every hospital, dispensary, and public charitable institution might with much advantage be provided with copies of the publications of the Association, for distribution amongst patients, who would thus receive a double benefit, and carry to their homes knowledge of the most serviceable kind, which might prevent their again suffering from disease and becoming burdensome to the community. Sick nurses, too, should certainly be indoctrinated with sound sanitary views; and any benevolently disposed individual could not find a better outlet for philanthropy, than by supplying, wherever they could be used, these tracts of the Ladies' Sanitary Association.

A Manual of Botany, including the Structure, Functions, Classification, Properties, and Uses of Plants. By ROBERT BENTLEY, F.L.S., M.R.C.S.E., Professor of Botany in King's College, London. Pp. 811. London: Churchill: 1861.

ANOTHER Manual of Botany! Surely the science of plants must be in the ascendant, when it demands another elementary work to aid the student. It might have been thought that the Manuals, Outlines, Rudiments, Introductions, Elements, Class-books, and Text-books already in the field (and many of them by living authors) were enough to satisfy the wants of the public. But Mr Bentley and his publisher have thought otherwise; and we have before us a confessed compilation from other Manuals, in which the author has availed himself extensively of the writings and wood-cuts of Jussieu, Lindley, Balfour, Henfrey, and others. In the general arrangement of the work, he has followed Professor Balfour in a very marked manner; and indeed the work may be said to be in reality an edition of the Edinburgh professor's Manual and Class-book, with the physiological portion very much curtailed, and the botanical geography, fossil botany, and glossary omitted. We cannot conscientiously recommend such a system of borrowing. If the King's College professor found it necessary to have a text-book for his class, he should either have given one of an original type, or have put into the hands of his pupils one of the works of which he has made such liberal use; and we regret that Mr Churchill should have added to his excellent series of Manuals one which is so little founded on the labours of the nominal author. It is needless to say anything in regard to the merits of the work, as we have already reviewed the sources whence it has been derived.

Part Third.

PERISCOPE.

PRACTICE OF MEDICINE.

ON THE VALUE OF ÆGOPHONY AS A SIGN OF PLEURISY. BY PROFESSOR
LANDOUZY OF RHEIMS.

IN speaking of ægophony, Lænnec said, "Everything announces that ægophony is a pathognomonic sign of pleuritic effusion." Skoda was the first to call in question this assertion, but the terms in which he expressed himself were sufficient to destroy the value of his statement. He said, "I have met with the simple ægophony of Lænnec as well when there was fluid effusion in the pleura as when there was not a single drop—as well in cases of pneumonia as in tubercular infiltrations with or without excavations." It is scarcely necessary to point out the exaggeration of these statements. No doubt the bronchophony of pneumonia, or the cavernous voice of phthisis, may to a certain extent resemble ægophony, but to a practised ear there are sufficient differences to constitute diagnostic signs.

Landouzy was the first to maintain that it is not to the fluid that ægophony is due, but only to the modifications produced on the lung by the fluid. In a work published some years ago, he said, "Ægophony is only a variety of bronchophony: it is dependent upon the modification impressed upon the lung by the effusion, but not upon the fluid itself." The professor now publishes two additional cases, which, though at first sight contradictory, demonstrate the real conditions upon which ægophony depends.

CASE 1.—A woman thirty-three years of age had had symptoms of pleurisy for about six weeks. On examination, there was found to be marked dilatation of the left side, displacement of the heart to the right, depression of the spleen below the false ribs. There was absolute dulness over the whole of the left side, anteriorly and posteriorly, equally intense below the clavicle as elsewhere, where there was no trace of tympanitic resonance; no natural respiration was audible, but there was tubular breathing most distinct near the vertebral column. Ægophony of the most marked character was audible, having its maximum of intensity at the junction of the upper with the two lower thirds of the lung, a little above the angle of the scapula, and not audible elsewhere. Paracentesis becoming necessary, in consequence of increasing difficulty of breathing, it was performed between the sixth and seventh ribs, and forty-eight ounces of clear serum were drawn off without the entrance of a single bubble of air. As the patient did not suffer at all during the withdrawal of the fluid, auscultation was repeatedly practised, and not only did the bronchial breathing persist during this time, but in proportion as the fluid was removed it appeared to approach the ear, and to become more intense; the ægophony also became more manifest and more sharply defined than before. At the end of the operation the ægophony extended posteriorly lower than before, and it was heard distinctly in the anterior part of the chest, where not a trace of it was audible previously. Accordingly there was *augmentation in the intensity and extent of the ægophony and the tubular breathing during and after the withdrawal of the fluid, the dulness persisting*. During the following days the general condition of the patient improved, but the same stethoscopic phenomena continued unchanged, although there was no longer any dilatation of the side or visceral displacement. On the tenth day after the operation a little vesicular respiration mixed with moist

rales was heard at the apex of the lung, and there was a diminution of the dulness in a space equal to the breadth of the finger. Six days later, the ægophony and tubular breathing had entirely disappeared, and respiration was audible from the apex to the base of the lung.

According to this case, therefore, ægophony indicates neither the existence, nor the quantity, nor the limits of a pleuritic effusion, it merely announces a special condensation of the lung; for it is due to the compression of the viscus, and not to the presence of the fluid. Does it then follow that clinical experience always gives the same results as the above, and that ægophony invariably persists after the withdrawal of the fluid? Certainly not; for, as the following case will prove, ægophony will disappear with the fluid when the lung has been simply compressed, and there has been no durable condensation of its tissue.

CASE 2.—A woman sixty-two years of age had suffered from pleuritic effusion, which had supervened in an almost latent manner, and had entirely resisted ordinary treatment. When seen by M. Landouzy the heart was much displaced to the right, the dulness was absolute, and bronchial breathing and ægophony were well marked posteriorly. As the dyspnoea was increasing, and her general condition deteriorating, paracentesis was at once performed, and gave issue to upwards of three quarts of limpid serum. As the date of the effusion was much the same as in the former case, Landouzy feared that the lung was already invested with firm false membranes, and that consequently the ægophony would increase after the operation. This, however, did not prove to be the case. There was a marked diminution in the ægophony, the bronchial breathing, and the dulness, in proportion as the fluid was withdrawn. Immediately after the operation, when the patient had rested a little, a return of the vesicular murmur (not recognised in the first patient till the tenth day), mixed with subcrepitant rales, was made out over the whole of the chest, and there was a considerable diminution in the ægophony, bronchial breathing, and dulness.

It follows, therefore, that if the lung is compressed by fluid alone, without firm false membranes, as soon as the fluid is removed it resumes its normal play, and a considerable diminution in the bronchial breathing, ægophony, and dulness, can be recognised at once. If the lung is invested with resistant false membranes, it does not at once recover the power of expansion, and for some time bronchial breathing and ægophony can be heard, and even heard more clearly than before, and this for the simple reason that the lung is now brought nearer to the ear. If, finally, the false membranes are fibrous or cartilaginous, the lung remains permanently imprisoned in an unyielding case, and when the fluid is evacuated, the modifications of the voice, of the breathing, and of the percussion, remain as before.

Ægophony then results from external compression of the lung, produced by pleurisy, while pressure from within, which results from pneumonia, gives rise to bronchophony. These are, therefore, two analogous phenomena; but between them there is a shade of difference, dependent upon the altered conditions of the pulmonary cells in pneumonia.

From these statements the following conclusions may be drawn:—

1st, Ægophony indicates compression of the lung, either by a fluid effusion in the pleura, or by a layer of false membrane without actual effusion.

2d, In the absence of resisting false membranes, ægophony disappears or diminishes on the removal of the effusion.

3d, When false membranes are present, ægophony increases immediately after thoracentesis, but diminishes gradually with the yielding of the membranes.—*Archives Générales de Médecine*, December 1861.

ON THE TREATMENT OF PLEURISY. BY PROFESSOR TROUSSEAU.

M. TROUSSEAU rarely employs blood-letting in the treatment of pleurisy; he scarcely ever cups even at the commencement of the disease. As an anti-phlogistic, he prefers calomel in minute doses, administered, according to the method of Low, aconite and digitalis. A favourite mode of treatment in these

circumstances is the following: calomel, a grain and a half, powdered sugar, a drachm and a half. To be carefully mixed and divided into twenty powders, of which one is to be taken every hour or every two hours. Tincture of aconite, and tincture of digitalis, of each 15 drops; ordinary julep, 5 ounces. A tablespoonful to be taken every two hours. The pleuritic pain may be relieved by the application of a compress soaked in chloroform, or in a watery solution of opium. The part having been rubbed for five minutes with the latter preparation, a moist rag is to be placed over it and covered with a piece of oiled silk.

When pleurisy is complicated with effusion, M. Trousseau has never recourse, in order to favour the absorption of the serous fluid, to blisters, so generally used in this state. Blisters, and especially large blisters, present several disadvantages; they cause great suffering, and are often the cause of ecthyma, abscesses, boils, carbuncles, erysipelas, and other severe accidents. Not long ago, there was in the Hôtel Dieu a patient who had been treated outside on account of pleurisy, and who, as the result of a blister, presented two abscesses of the thoracic parietes, so situated that they at first appeared to communicate with the interior of the chest, or to be symptomatic of caries of a rib. They had, however, been produced by the application of a blister, and on being dressed in the usual way soon healed.

M. Trousseau's treatment of effusion varies according to its importance. If the amount is inconsiderable, he confines himself to the administration of digitalis in doses of 10 or 15 drops, of diuretic drinks, quiet, and a light diet. If the effusion is considerable and the pleurisy simple, he evacuates the fluid by means of thoracentesis. M. Trousseau does not allow himself, under these circumstances, to be guided by the degree of oppression. He has actually seen two women, affected with enormous pleuritic effusions, die suddenly, without having experienced the least dyspnoea. One of these patients was a nurse, at the twelfth day of pleurisy; she died while sleeping, and her countenance expressed the most perfect calm. M. Trousseau is inclined to share the opinion of Aran, who recommended that the operation should be practised as soon as the effusion had reached the fourth rib; in fact, in these circumstances he has never seen a bad result follow. However, he seldom operates until the fluid has reached the level of the clavicle.

The operation is very simple; the puncture is made in the fourth or fifth intercostal space. If there is no other means at hand to prevent the introduction of air into the pleura, the wide end of the canula is plunged into the fluid which is flowing out, and this latter is itself an obstacle to the entrance of air. Thus practised, thoracentesis has always excellent results when the effusion is on the left side, that is to say, when the pleurisy is simple; for Aran found, by clinical observations, that, ninety-five times in a hundred, pleurisy of the right side is secondary, being connected with tubercular disease of the lungs, while pleurisy of the left side is generally primary.

In the case of tubercular pleurisy with effusion, thoracentesis may be resorted to as a palliative, although necessarily with little chance of success. Topical applications are, however, often useful, particularly the repeated application of iodurated preparations, and especially of the alcoholic tincture of iodine.—*Journal de Médecine et de Chirurgie pratiques*, March 1862.

OBSERVATIONS UPON INTERNAL ANEURISMS. BY PROFESSOR NIEMEYER.

ACCORDING to Niemeyer, internal aneurisms occur with far greater frequency in men than in women; out of 41 cases, 35 occurred in men, only 6 in women. The earliest age at which the disease was met with was 19 years, the most advanced 84. Five cases occurred between 19 and 30 years; 15 between 30 and 40; 8 between 40 and 50; 9 between 50 and 60; 4 between 60 and 84. The duration of the disease could be made out in 36 cases. In 6 who were still alive, it had existed for 20, 10, 6, and 3 years; in 30 who were dead, it had lasted for periods varying from 6 years to 14 days; in 9 cases, it had existed between 12 and 3 months. A cause could be assigned for the disease in only 5 cases; in 2 it was ascribed to injury, in 3 to sudden straining.

The *symptoms* first experienced varied according to the seat of the affection; they were palpitation of the heart, difficulty of breathing, paralysis of the upper extremities, weakness, and local pain. As to *complications*, tuberculosis occurred five times, cancer once, tubercle and cancer once. Atheroma was noted ten times, chiefly in the sac and its immediate neighbourhood. As accidental complications may be mentioned, irritation of the vagus and recurrent nerves, obliteration of the thoracic duct, and displacement of the vena cava. Forty-two cases terminated fatally; in twenty of these rupture occurred, namely, twice in the right ventricle, twice externally through the sternum, once into the trachea, once into the right bronchus, three times into the left, twice into the left pleural sac, twice into the pericardium, once into the duodenum, four times into the peritoneum, twice within the cranium. Two of these cases belonged to the class of dissecting aneurisms. Three cases are remarkable in this respect, that though the thoracic parietes were completely perforated, rupture did not occur. In three cases, partial rupture manifested itself by the occurrence of hæmoptysis. In fourteen cases, death was due to suffocation, general collapse, dropsy.

In thirty-six cases, arteries within the thorax were affected; in all these cases, the patients suffered more or less from oppression, and preferred the sitting posture. In eighteen cases, a swelling was visible, ten times in the jugular fossa or alongside of it, eight times in the anterior part of the chest. The tumour always pulsed except in one case, once the pulsation persisted for five minutes after death. The radial pulse was only six times unequal on the two sides; it was wanting or diminished four times in the right, twice in the left side. In eight aneurisms situated in the abdomen, violent pain was a constant symptom, generally in the immediate neighbourhood of the disease; once the pain assumed the form of sternal neuralgia, and once that of sciatica. Four times the tumour could be recognised; three times pulsation was wanting; a bruit was heard in only two cases.—*Schmidt's Jahrb.* 1861, 5, and *Prag Vierteljahr.* 1862, 1.

CASE WHERE ASTHMA WAS PRODUCED BY PRESSURE ON THE SUPERIOR VENA CAVA.

A WOMAN, 45 years of age, of moderately robust constitution, was admitted into the Hospital La Charité on the 2d February 1862, and was examined on the following day by Professor Piorry. The principal symptom which she presented was a considerable difficulty in respiration, manifested by the frequent elevation of the ribs. The face was of a violet hue, and had a general expression of suffering. When asked to point out the spot where she felt pain, she referred to the cardiac region. The first point which attracted the attention of the physician was a considerable dilatation of the venous branches, which, starting from the sub-cutaneous thoracic region, proceeded towards the left and even the right subclavian. The jugular veins (external, anterior, and internal) and the veins of the head were also distended, and did not diminish in volume after repeated expirations, any more than they increased in size when the patient diminished considerably the rapidity of her respiration; a circumstance which, according to Professor Piorry, proved that the obstacle to the flow of blood was situated in the circulating organs, and not in the lungs. Application of the hand to the thoracic parietes caused no pain, but a purring thrill was perceptible. The extent of the cardiac dulness, as determined by the pleximeter, and traced with a pencil, was 5·6 inches from side to side. The form of the organ was regular. Above the heart and aorta, and a little to the left, was a very dull space of an oval form, measuring 2·8 inches from above downwards, and 2 inches from side to side. The arch of the aorta was not dilated. Under the influence of repeated deepened expirations, the heart became somewhat diminished in size, whilst the size of the tumour did not alter. No abnormal sound of any kind was heard in the cardiac region. The liver was of the normal size; it diminished somewhat when the respirations were accelerated. Percussion showed that the thyroid gland was increased in size, and that inferiorly it was continuous with the tumour. Questions addressed to the patient, and a

critical examination of her symptoms, led to the following result : The patient came from Dijon ; she knew many persons in that locality who were the subjects of goitre ; she herself had suffered from it in her infancy. Her health was good till three months before admission. Her symptoms increased slowly, but incessantly ; and her chief source of suffering was difficulty of breathing. Professor Piorry's diagnosis was, *Asthma, caused by the pressure of an intra-thoracic tumour upon the superior vena cava*. Was the tumour an aneurism, or a tuberculous or cancerous mass ? or was it a tumour of the thyroid gland ? Whatever it was, it compressed the vena cava superior, and hence the dilatation of the veins, the stasis of the blood, the difficulty in breathing, etc. Professor Piorry, however, had several times seen the thyroid body extend beyond the mediastinum, so as to compress the aorta and vena cava. The patient died three days after her admission to the hospital, and the diagnosis of M. Piorry was verified by the results of the post-mortem examination. The superior vena cava was compressed by a tumour consisting of the hypertrophied and cancerous thyroid gland.—*Gazette des Hôpitaux*, 18th February 1862.

TREATMENT OF TINEA FAVOSA. BY DR BAZIN.

THE first point to be attended to is the cleansing of the head, the getting rid of the crusts, and of lice if there are any. The hair is to be cut quite short, and the lice are to be destroyed with mercurial ointment or sulphurous baths. The crusts are detached by means of fomentations with tepid water, or emollient poultices. When the crusts are got rid of, all the parasites on the surface are to be destroyed by means of a solution of corrosive sublimate ; the congestive redness and the depressions do not prevent this application. The second indication is to get rid of all the hairs of the affected parts and of those in their neighbourhood if the favus is limited, of the entire hair if the disease is diffused. The process of epilation is much facilitated, if care is taken to soak the whole of the hair with pure oil of cade. Epilation is practised by means of a pair of tweezers, roughened at the end like a file ; the precautions to be taken in performing it are the following :—1. Always to pull the hairs in the direction of their long axis. 2. When the scalp is very sensitive, to grasp at the same time only those hairs which are implanted in the same follicle. 3. To remove completely all the scattered hairs.

When the first epilation has been performed, the head is to be washed with soap and water, and by means of a soft brush a solution of corrosive sublimate is to be applied to the free follicles. The following lotion is to be employed morning and evening for four days : corrosive sublimate, 30 grains ; water, 16 ounces ; alcohol, enough to dissolve the salt. The lotions with this solution are then to be replaced by inunctions with the following pomade, which may be used for a longer time : turbeth mineral, 8 to 15 grains ; axunge, an ounce. Epilation is to be practised a second time, as soon as the hairs can be seized with the tweezers, and the parasiticide applications are to be resumed. The same process must be repeated as long as the smallest spot of favus can be seen, or whenever fresh red points or little erythematous circles make their appearance. If the disease is situated upon the body, it may possibly be got rid of by means of corrosive sublimate baths ; but if it returns, epilation must be practised of the little spots on which it reappears.—*Gazette Medicale*, 1st March 1862.

TREATMENT OF PITYRIASIS OF THE HEAD. BY DR HARDY.

PITYRIASIS is a troublesome complaint, especially disagreeable in the case of women, and which becomes in their case a source of serious annoyance, when it sensibly affects the beauty of their hair. In pityriasis of the head, Dr Hardy begins by having the hair cut short. He then prescribes emollient lotions, or oleaginous frictions, to remedy the dryness of the hair. A little later he modifies the cutaneous secretion by washing the part with soap and water, which he prefers to solutions of subcarbonate of soda or potash. But the mode of treatment which he finds to answer best, is the employment of sulphurous baths and pomades.

The pomade which he finds to succeed the best is the following: flower of sulphur, 15 grains; axunge, an ounce. In addition to sulphurous applications, Dr Hardy makes use of preparations of nitric acid, of which the following is the weakest: nitric acid, 15 drops; axunge, an ounce. When this pomade is applied to the affected parts morning and evening, it causes the disappearance of the scales.

In addition to these local applications, sulphur is given internally: attention to diet and regimen is also of great consequence, from the former all highly spiced meats are to be carefully excluded.—*Revue de Therapeutique*, March 1862.

TREATMENT OF PSORIASIS. BY DR HARDY.

DURING the inflammatory stage of psoriasis, Dr Hardy prescribes emollient and alkaline baths, to which he unites the employment of laxative tisanes. In the second stage he commences the treatment with arsenic, ordering one or two grains of the arsenite of soda to be dissolved in ten ounces of water, and a tablespoonful to be taken for a dose. At the end of the second period, when the disease has become chronic and stationary, Dr Hardy has recourse to pomades containing sulphur, mercury, or pitch. The following are a few of Dr Hardy's prescriptions:—

1. Sulphur, 15 grains; excipient, an ounce.
2. Citrine ointment, ʒiss to ʒiij; axunge, an ounce.
3. Protoiodide of mercury, 15 grains; excipient, 1 to 2 ounces.
4. Biniodide of mercury, 15 grains; excipient, 2 ounces.

Pitch or *oil of cade* should only be employed pure in cases of inveterate psoriasis, which it is necessary to modify energetically. Dr Hardy usually prescribes them in an excipient in the proportion of a fourth or a sixth part of the active agent. In the case of oil of cade, he often employs at the Hospital of St Louis the following preparation:—

Glycerine, 1 ounce; to be heated, and a sufficient quantity of starch to be added to it to reduce it to the consistence of a pomade: Oil of cade, ʒi to ʒiss; to be well mixed up and allowed to cool.

Dr Hardy does not confine himself to these topical applications: he continues the internal use of arsenic, because it has appeared to him that, by combining these two classes of therapeutic agents, we accelerate the cure, and avoid to a great extent the danger of relapses.—*Journal de Médecine et de Chirurgie pratiques*, March 1862.

MATERIA MEDICA AND THERAPEUTICS.

ON SANTONINE AS A VERMIFUGE. BY DR ABBOTTS SMITH.

THE anthelmintic virtues of the different species of wormwood (*artemisia*) were well known to the ancients; and in France and other continental countries, recourse has long been had, when a vermifuge was required, to the administration of wormseed, which generally goes by the name of "*semen-contra*" (i. e., *semen contra vermes*), and which consists of the broken flower-stalks, involucre, and flower-buds of several kinds of *artemisia*. The chief objection to the use of this substance is the large dose required—nearly half-an-ounce—and which is apt to occasion dyspepsia and sickness; the crude drug has consequently been in great measure abandoned, and its place taken by santonine, a crystalline substance, procured from wormseed, and which possesses similar properties.

Santonine, or cinine, as it is sometimes called, is a white, inodorous, and, when pure, almost tasteless powder; very sparingly soluble in water, but readily dissolved in fatty oils. It has a slightly acid reaction, of which advantage has been taken in the manufacture of a series of salts, santonates, formed by its union with certain bases.

For children, one to three grains would constitute a proper dose, and for adults, two to five grains, administered twice or thrice daily. It should be given in some oily vehicle, and none will be found more advantageous than castor-oil. If, for any reason, castor-oil be unsuitable, the powdered santonine may be

given on a piece of bread-and-butter, or in honey; some purgative, such as jalap, being ordered to be taken about three hours afterwards. When the oxyuris is the parasite with which the patient is troubled, some of the drug may be combined with an enema.

In 1859 I published a short communication upon this subject in the *Lancet*, and I have since then employed santonine in a considerable number of cases, from which I propose to give a summary of fifty, in order to show the value of that remedy.

In twenty-eight of these cases the prevailing entozoon was the oxyuris, in seventeen the *tænia solium*, and in five the *ascaris lumbricoides*. Of the total number of patients nineteen were cured after undergoing treatment for a duration of from one to five weeks, fifteen were much relieved, nine presented some improvement, and in the remaining seven no permanent good result was obtained.

The relative efficacy of the medicine varies according to the species of parasite, the greatest degree of benefit having been procured in the cases of round-worm, next in tape-worm, and least in those of the thread-worm; this comparison only holds good, however, when the santonine is administered by the mouth, for the cure effected by the use of enemata containing santonine was very speedy in several cases of thread-worm.

It is, perhaps, worthy of remark, as serving to illustrate the periods of life at which the different entozoa predominate, that fifteen of the cases of *tænia* occurred in adults, and that, on the contrary, twenty-three of the individuals suffering from oxyuris were under twelve years of age, whilst the history of the five others went far towards establishing the fact that they had been subject to thread-worms from childhood; four of the cases of *ascaris lumbricoides* happened in very young persons.

Some authors have raised an objection to the use of santonine, in consequence of certain secondary results which are occasionally produced by it, of which the most common is the peculiar coloration of the vision, everything appearing to the patient to be of a yellow or greenish tint. This phenomenon is only of a transient character, and passes off in a few hours after the suspension of the drug, or sooner, if a purgative be administered, without causing any injury; but it would always, of course, be proper to apprise the patient of its possible occurrence.

Various conjectural explanations of this singular phenomenon have been offered; some have attempted to account for it by supposing that the serum of the blood acquires a yellowish tinge; and others, again, imagine that a temporary influence is exerted upon the optic nerve, or the retina. Its coincidence with the exhibition of santonine internally has, as might be expected, induced some practitioners to give that agent a trial in the treatment of deeply-seated affections of the eye. Dr Martini, of Naples, has reported that much benefit attended its administration in several cases of nervous amaurosis; and M. Guépin, of Nantes, has confirmed Dr Martini's statements; but further evidence of the nature and degree of the action of santonine upon the visual organs is necessary before it can be admitted into the list of acknowledged ophthalmic remedies.—*Medical Times and Gazette*, 8th March 1862.

THE ACTION AND USES OF PODOPHYLLIN.

THE *Podophyllum peltatum*, May-apple, or mandrake (which latter name it shares in common with other quite different plants), belongs to the natural order *Ranunculaceæ*. It is found in great abundance in all the northern states of America, from New England to Georgia, propagating itself rapidly by its roots; so that it presents two favourable conditions—cheapness and unmistakableness. Its fruit is subacid, and agreeable to some persons, and is eaten with impunity under the name of wild lemons. The leaves are said to be poisonous and narcotic, but their properties do not appear to have been investigated. The fact that the root of this plant possessed powerful medicinal properties was long known; forty years ago, Dr Jacob Bigelow stated that it was "a sure and active cathartic, answering the purposes of jalap, aloes, and rhubarb, but more safe and mild in its operation in doses of twenty grains, given in the state of a fine powder." Dr Kidd of Cincinnati stated that the fresh root was an

irritant poison; but that, by drying and keeping, its violent action was much moderated, although in doses of thirty to sixty grains it was a violent cathartic and emetic. In moderate doses, it was a cathartic similar to jalap, but acting more slowly; in small and repeated doses it had a powerful deobstruent action, and was peculiarly useful in chronic hepatitis, scrofula, syphilis, rheumatism, and other chronic diseases. With all these virtues, however, the crude drug never came into extensive use, in consequence of the presence of an acrid principle which produced uneasy sensations in the throat, frequently nausea and vomiting, with great and distressing depression.

The substance *Podophyllin*, however, appears to possess all the valuable qualities of *Podophyllum*, while it is free from its unpleasant effects. The name, unfortunately, has been given to two different things: one, the pure resin extracted from the root, and which does not appear to possess any special virtues; the other, the podophyllin of commerce, which is a concentrated preparation of the crude drug, and appears to be a complex substance. Podophyllin has been used very extensively in America since the year 1847, and is believed to possess all the advantages of mercury, without producing any of its disagreeable effects. It is regarded as almost a specific in diseases of the liver, as useful in all forms of fever, but especially in puerperal fever, as capable of relieving congestions of the brain, of acting as a powerful alterative, and as curing rheumatism, croup, habitual constipation, amenorrhœa; and in minute and long-continued doses, many skin-diseases, and even syphilis and scrofula. Its use should be avoided in inflammatory states of the bowels. No doubt, the good effects have been exaggerated; still the mass of evidence in its favour is too great to be lightly set aside. In this country Podophyllin has of late been pretty largely used, and the *Lancet* contains testimony in its favour from three physicians. From their statements it would appear that it acts specially on the liver, and in this respect is more energetic than mercury or any other cholagogue. The purgative effect is slowly produced, being seldom manifested till ten or twelve, or even sixteen or twenty hours after it has been swallowed; sometimes its action is unattended with uneasiness, but generally there is a sensation of tormina or twisting and spasmodic action in the upper region of the abdomen and about the navel.

The doses of Podophyllin are from one to three grains as a cholagogue and cathartic; half a grain to one grain as a moderate purgative; one-fourth of a grain to half a grain as an aperient; a sixth to a quarter of a grain, three times a-day, as an alterative. A warm infusion of ginger is said to be the best means of relieving tormina and griping when caused by its use. In cases of amenorrhœa with constipation, when given in doses of a quarter of a grain twice a-day, it is stated by Dr Ansell, to act as a powerful cholagogue, cathartic, and emmenagogue. Dr Ramskill, to obviate the tendency to produce griping, prescribes it in the form of a pill composed of equal parts of Podophyllin and Indian hemp. Hyoseyamus or conium may be combined with it for the same purpose, but are apparently not so effectual.—*The Lancet*, 22d Feb., and 15th March.

SUBNITRATE OF BISMUTH IN DIARRHŒA.

SUBNITRATE of bismuth is considered in the present day one of the best remedies in cases of diarrhœa, and is employed with great advantage in the treatment of chronic dysentery. Under its influence the ulcerations cicatrize, the fetid gases are destroyed, and the excrements become black and lose their putrid character. But as the medicine requires to be taken in large doses, in order that it may exert a beneficial influence, some patients soon become disgusted with it, in spite of its insipidity. Dr Gaubert announces that he has found cream a very convenient recipient for its administration, especially in the case of young lymphatic subjects, who generally require tonics, and in whom the sensibility is often exaggerated. This preparation, due to Dr Quesneville, has the advantage of presenting the subnitrate of bismuth in the form of a thick cream, which, on the addition of water, forms a milky fluid, without granular residue; and it will be readily comprehended that this state of minute division is highly favourable to its diffusion throughout the digestive canal, and conse-

quently to the rapid obtaining of its therapeutic effects; so that smaller doses than ordinary are sufficient.—*Gazette Hebdomadaire*, 28th February 1862.

ON THE TREATMENT OF PYROSIS AND GASTRORRHEA. BY PROFESSOR
OPPOLZER.

THE author observes that the bicarbonate of soda, the remedy generally prescribed in pyrosis, is not to be recommended, because the soda, by combining with the acids of the stomach, forms salts which may themselves produce a return of the affection. The powder of *conchæ preparatæ* and *lapides cancerorum*, and other preparations of lime, are likewise agents which he rarely prescribes, because it is difficult to pulverize these substances sufficiently minutely to prevent the presence of rough particles, which may rub upon the walls of the pharynx and stomach, and so give rise to irritation or even vomiting. Oppolzer employs in preference, in cases of pyrosis, calcined magnesia. He also uses, with great success, carbonate of ammonia, or pure ammonia in the proportion of one or two drops in one or two ounces of water. In cases of gastrorrhœa he prescribes the continuous application of ice to the epigastrium, and at the same time administers ice internally, with astringents. Among these latter, tannin, according to him, is to be preferred to all others, because it has not the disagreeable taste of the acetate of iron, and because in large doses it does not give rise to vomiting so readily as alum, acetate of zinc, etc. Finally, the author recommends, as the most effectual remedy in cases of chronic gastric catarrh, sulphate of zinc, in the dose of one grain to an ounce of water.—*Deutsche Klinik*, and *Gazette des Hôpitaux*.

ON THE TREATMENT OF PYROSIS AND GASTRORRHEA. BY DR CAFFE.

THE common treatment of these conditions consists in the employment of calcined magnesia and sal volatile. M. Caffé has found the following powders very serviceable:—

R Calcined magnesia,	.	.	gr.ij.
Subnitrate of bismuth,	.	.	gr.ij.
Ginger,	.	.	gr.j.
Extract of aconitum napellus,	.	.	gr.½.

To be taken as a dose.

Gastrorrhœa readily yields to the use of small fragments of ice taken into the mouth, and to be swallowed before they are completely dissolved. A grain of tannin may be taken occasionally as an auxiliary.—*Bulletin de Thérapeutique*, Dec. 1861.

IODIDE OF AMMONIUM IN SYPHILIS.

GAMBERINI employs iodide of ammonium in the treatment of syphilis. According to him its action is rapid and certain in all cases where iodide of potassium is indicated, to which it is superior as being quicker in its action, and in requiring to be given in smaller doses. The forms of the disease in which the remedy was found useful were consecutive hardenings, the remains of indurated chancres, indurated glands, arthralgia, periostitic affections. In the cases of muscular and articular pains of syphilitic origin, Gamberini employs the iodide of ammonium in the form of a liniment, consisting of fifteen grains in an ounce of olive-oil. Intolerance of the remedy is indicated by a feeling of burning in the throat and stomach, which, however, disappears when the medicine has been discontinued for a day or two.—*Bullet. delle scienze mediche*, and *Prag. Viertel-jahrschrift*, 1862.

ON DRY POMEGRANATE BARK AS A CURE FOR TÆNIA. BY PROFESSOR COLIN.

I HAVE lately had the opportunity of employing the dry bark of the root of the pomegranate in the case of two persons who had been affected with tænia solium during several years. In each case I prescribed the bark according to the formula of Bourgeois—two ounces of the bark to twenty-five ounces of water; to be allowed to macerate for twelve hours; the fluid to be reduced by boiling to sixteen ounces, and to be taken fasting in three doses, at intervals of a quarter of an hour.

In each case the expulsion of the entozoon took place three hours after the administration of the medicine. In the first case the worm was thirty-five feet in length, and the head was found attached to the slender neck. In the second the head likewise was found: the length of the worm was forty-five feet and a half, and the whole came away in one piece. Each of the patients told me, on his admission into the Val-de-Grace, that he had already taken, but without success, the pomegranate bark; the second had also been treated with kousso.

I may add, as a practical remark, that in many cases the head of the parasite is not found only because it is not carefully looked for. This is particularly the case when the duty is confided to the friends of the patient, or to hospital nurses. In military hospitals, especially, the best way is to superintend the operation, and to cause it to be performed by the patient himself, who endeavours with a real interest to discover the head of his enemy. The best plan is to mix the fecal matter with a large quantity of water, and to pass the whole through a coarse cloth.—*Gazette Hebdomadaire*, February 1862.

EMPLOYMENT OF MAGNESIA TO ASSURE THE ASSIMILATION OF COD-LIVER OIL.
BY M. DANNECY, BORDEAUX.

AMONGST the numerous individuals who make use of cod-liver oil, many complain of not being able to retain it, and of being obliged to reject it some hours afterwards, even when they had taken it at the beginning of their meals,—a singular thing being that they only vomit it when the digestion of the food is finished. Consulted frequently under these circumstances, and by persons to whom in other respects the use of the oil caused no repugnance, I advised them to swallow after the oil eight or ten grains of calcined magnesia, mixed up with a little water. The success of this plan has been complete. In order to assure myself if the effect was due to the magnesia, I directed its employment to be discontinued. Immediately the vomitings reappeared, to disappear again under the influence of the magnesia. I was led to the employment of this substance by the recollection of the curious and interesting experiments of Dr Jeannel on the reduction to the state of emulsion of fatty bodies by means of alkalies, and by the theory which he proposed of their assimilation.—*Bulletin de Thérapeutique*, December 1861.

TRAUMATIC TETANUS CURED BY CHLORIDE OF BARIUM. BY DR GNECCHI
OF MILAN.

A HAIRDRESSER, thirty-nine years of age, cut himself in the palm of the left hand, about the beginning of March 1858. The wound healed in six days, and there was no bad consequence until the morning of the 30th of March, when, on getting out of bed, he began to feel a difficulty in opening the mouth, a contraction of the left hand with impossibility of extending it, with pain in the right flank and thigh. For the first few days these symptoms disappeared when the patient lay down in bed, but returned when he got up and exposed himself to the air. On the 10th of April, as the symptoms were increasing in severity, the patient was admitted into the principal hospital of Milan. Next morning there was spasmodic contraction of the masseters, with rigidity of the muscles of the neck; the left hand contracted as soon as the arm was removed from below the clothes, while the pain in the flank and thigh persisted. The pulse was but little increased in frequency. Chloride of barium was prescribed in the form of sixteen grains of the salt in a pound of distilled water, to be taken in the course of the twenty-four hours. This dose was continued till the 31st, when, as the tetanic symptoms had almost disappeared, it was reduced to eight grains. The medicine was discontinued after the 26th April, and on the 28th the patient was dismissed cured.

In connexion with this case, it may be stated that Dr Gneecchi has since succeeded several times in curing traumatic tetanus with this preparation of barium, that Dr Gherini failed, but that Dr Tassani succeeded in the case of a man wounded in the Italian war.—*Gaz. Med. Ital. Comb.*, and *Gazette des Hôpitaux*.

Part Fourth.

MEDICAL NEWS.

JOTTINGS FROM THE PARISIAN HOSPITALS.—No. II.

BY WILLIAM TURNER, M.D. (EDIN.)

THE discussion upon the hygiene of the hospitals continues to occupy the attention of the profession, and is carried on with unabated ardour, especially in the Academy of Medicine; and I think that it will yet bear fruit in the form of some important practical improvements. It has been said that discussion is the only mode of arriving at truth, and in the course of this debate, as in all others, some most enlightened views on the subject have been put forth. I would note especially those recently presented to the Academy by M. René Marjolin, surgeon to the *Hôpital Sainte Eugénie*, in which he drew a comparison between the management of the French hospitals and that of those in Germany and England. The demands for an amelioration of some of the evils of the present system are, I think, as clamant and as obvious as could well be, especially as exhibited by the class of diseases prevalent in the hospitals: for example, during the three months, November, December, and January, the diseases which predominated in them were typhoid fever, variola, erysipelas, pneumonia, rheumatism, and catarrh. Puerperal fever has been so rife lately in Pajot's obstetric wards in the *Hôpital des Cliniques*, that the administration for a time suspended the admission of patients; but, fortunately, this formidable epidemic is once more under comparative control. At the present time erysipelas is working considerable mischief in the surgical wards,—almost every fourth or fifth patient, I think I may venture to say, being attacked with it, at least in some of the hospitals. Not only do the major operations of surgery become more serious, but even the most trifling assume a gravity, from the risk of erysipelas, pyæmia, etc., which they ought not otherwise to possess. Many of the wards are large and commodious, with lofty ceilings, and well lighted; but any advantages they may possess in this respect are more than counterbalanced by the bad arrangements. They are heated, as I formerly stated, to a degree oppressive to a person in the full enjoyment of health, and therefore much more so to those less capable of enduring either extreme of temperature. The beds are much too numerous, some of the wards containing at least twice the number usually seen in the same space in an English hospital; some of them, indeed, are placed so closely alongside of each other, that one has just room enough to walk between the two adjoining. Then, again, some of them are usually placed so near the windows (which are abundant enough), as to prevent the keeping of them open for any length of time, which might to a certain extent counterbalance the evil of overheating. Indeed, the oppression one feels on entering a ward is produced more, I think, by the foulness of the atmosphere than the heat, for the windows are fitted with scrupulous exactitude; there are no chimneys, and the only means of ventilation I can see are the casual opening of the doors by the ingress and egress of attendants and others, and the occasional but rare opening of a window. What aggravates the evil is, that their little white curtains, which I

believe are only washed twice a-year, are with a mistaken kindness drawn closely round the beds at nightfall. The wards are heated by means of hot-air stoves,—a plan, as you can well understand, very inferior to that of the grates and open chimneys of English hospitals, by means of which the air is both renewed and purified much more effectually. The sick are usually mixed up together; fever, variola, scarlatina, and other maladies being grouped in the same ward among the ordinary patients without any special precautions being used; and the disinfecting of the bedding, etc., after such cases is very insufficiently attended to, these being often merely put out upon the stairs for some hours to be aired.

In detailing a few of the cases which have come under my notice since last month, I shall begin once more with Maisonneuve. He had lately a case of complete occlusion of the inner extremity of the vagina, and of the neck of the uterus, occurring in a young woman after a severe labour, and causing retention of the menses; the only case of the kind he had seen, though he had met with and successfully treated several cases of the same nature occurring congenitally. He operated upon her by pushing a large flat trocar (Guerin's) into the cavity of the uterus, and introducing by this aperture a double-bladed *bistourie-caché*, with which he enlarged the opening to the necessary extent, by making two incisions at right angles to each other. Unfortunately, in the course of four days, the patient succumbed with symptoms of peritonitis. On making the autopsy it was found that she had had a metro-peritonitis, and that one of the Fallopian tubes was considerably distended; to the latter circumstance, Maisonneuve attributed the origin of the inflammatory action. He supposed that when he emptied the uterus the blood in the distended tube still remained there, became putrid, and that when he syringed the uterine cavity, which he did immediately after operating and twice afterwards, this putrescent fluid was driven into the peritoneal cavity, thereby causing the inflammation of which the patient died. He thought it possible that if the injections had not been made, the tube might have contracted peristaltically, and forced its contents back into the uterine instead of the peritoneal cavity. Another case of considerable interest is that of an old woman, æt. 60, who was brought to his wards on 11th January 1862, with a compound comminuted fracture of the lower end of the right femur, the wound, moreover, communicating with the knee joint,—a complication of injuries far from encouraging, and which, as he said, would have at once determined most surgeons to amputate, instead of putting up the limb in plaster of Paris splints as was carefully done in this instance. The result justified the procedure; the external wound healed by the first intention, and the case progressed so favourably that, when the splints were removed (15th February), the cure was found to be complete so far as the fracture was immediately concerned. A man came under the same surgeon's care a short time ago with a large goitre developed on the right side of the neck, and extending a little across the middle line. As the voice was very husky, and there was considerable embarrassment of the respiratory function, with pressure on the vessels of the right side of the neck, interference in some form or other was urgently required. The knife or ligature in this instance being entirely out of the question, he determined to try as his only resource what he terms *cauterisation centrale*, a method of operating which he claims as peculiarly his own. This plan of treatment consists in introducing into the very centre of a tumour one or more *flèches* composed of the chloride of zinc, and thereby setting up such an amount of inflammation and subsequent sloughing as completely to destroy the tumour and so obtain a cure. For some days the case progressed very favourably, the inflammation running its ordinary

course; but one morning, on removing some of the sloughs thus produced, there immediately ensued an alarming hæmorrhage, the blood welling out in an abundant stream. Maisonneuve, however, without in the slightest degree losing his habitual coolness, at once demanded charpie soaked in perchloride of iron, with which he stuffed the wound. Since then there has been no recurrence of the hæmorrhage, and the case has gone on as well as could be expected. He explained the hæmorrhage at the time by supposing that he had introduced the *flèches* (three in number) in too close proximity to the carotid artery, and that the slough had extended into and opened this vessel; but he now entertains the opinion that the bleeding was due to the goitre being of an aneurismal nature: he is still hopeful of a cure. He has great faith in the chloride of zinc, both as a cauterizing agent and as a hæmostatic, and seems to have quite a detestation of the bistoury, scarcely ever employing it, and attributing to its use all the evils which arise in the hospitals; he prefers to operate with the cautery, especially in the form of chloride of zinc, with the ligature, etc. He advocates strongly the use of a peculiar instrument for the division of strictures of the indurated class; it is not adapted for the elastic form. It has the form of an ordinary metallic bougie or catheter, grooved along the upper surface. In this groove runs, somewhat after the manner of the male blade of the lithotrite, a small metallic rod, bearing on its extremity an irregularly triangular-formed blade, with its cutting edge on the shortest side of the triangle, and looking towards the stricture. The extensible tissue of the urethra expands before the advancing blade as it is pushed along, and rides over it without the slightest chance of injury; but as soon as the blade comes in contact with the non-extensible stricture, it meets with resistance, and the sharp edge is then pushed firmly against it and immediately divides it. In the cases in which I have seen it used it seemed to answer its purpose very well.

On making the autopsy of M. Demarquay's case of ovariectomy, of which I spoke in my last, there were found manifest traces of a general peritonitis, with a quantity of sero-sanguinolent fluid in the peritoneal cavity. Nélaton is of opinion, that when the pedicle was disengaged from the clamp by the vomiting which took place, it returned into the abdomen, and the effusion of sero-sanguinolent fluid which followed gave rise to the fatal peritonitis. At one of Nélaton's clinics, a M. Marais exhibited to us a very ingenious, but simply constructed instrument for ascertaining the force and regularity of the pulse. It is of no great weight or bulk, and of very easy adaptation. It is fastened upon the wrist by a cord, which passes several times across the posterior surface of the limb, and is twisted, at every recrossing of the limb, round little pins situated along each side of the instrument; so that it becomes, in a sense, fairly incorporated with the forearm. The artery beats against one end of a small flat lever, which pushes upwards a little perpendicular brass pin, which again in its turn acts upon the short arm of a lever, of which the long arm constitutes the *stilette* or pen. Then a narrow flat brass plate, covered with a piece of white paper, advances steadily and gradually, by means of a spring previously wound up, towards the pen, which registers upon it the rhythm, etc., of the pulse, in the form of an undulating line. The long axes of both paper and pen are in the same direction; but the point of the latter is turned at a right angle to itself, so as to inscribe the wavy line upon the paper as it runs up alongside of the pen, in the same manner as a train runs up to a railway platform. From its portability, its simplicity of construction, and facility of application, it contrasted very favourably with an instrument for a similar purpose, of German invention, which I saw shown some time ago in Edinburgh by Professor Goodsir,

the latter being of such complicated mechanism, and withal so delicate in some of its parts, as to render it practically useless in public wards. The following Sunday (after a manner characteristic of the French) was fixed upon as most convenient for the demonstration of an apparatus which the same gentleman had very ingeniously constructed for the purpose of illustrating the human circulation: it was formed principally of India-rubber tubing. The following is the course of the imaginary life-giving fluid; the liquid was first poured into an ordinary glass funnel, whence it descended through a short tube into a caoutchouc bag, representing the auricle, and thence by a similar tube into another bag, the ventricle, contained in an air-tight glass globe; from the ventricle it ascended through the aorta and its various branches,—all these, however, ending in blind extremities, with the exception of two vessels which terminated in two finely drawn-out glass tubes, through which the fluid was emptied into the glass funnel, its starting-point, and thus completing the circuit. The object of these glass tubes, with their narrow apertures, is to produce the necessary degree of resistance requisite to create the counterpart of the distension and resilience of the arteries. In the tubes between the funnel and the auricle and the auricle and ventricle, and at the commencement of the aorta, are placed the valves, also composed of India-rubber, and shaped like a thimble, with one-half of their external surface attached to the internal surface of the tube; so that when the fluid is propelled onwards, it strikes upon the convex surface of the valve, and flattens it against the walls of the tube, but immediately upon regurgitation the thimble-shaped pouch is filled, expands, and effectually closes up the tube. Attached to the glass globe, above-mentioned, is a tube with an air-tight elastic bag at its free extremity, upon which pressure is made by the hand, and its atmospheric contents are thus forced into the glass globe, where they compress the India-rubber ventricle and compel the fluid in it to rush onwards through the artificial vessels, and at last to fall into the glass funnel, thence by its own weight, first, into the auricle, and then the ventricle, thereby completing the circle; no retrograde movement is possible on account of the valves. By compressing the air-bag at regular intervals, you can produce the regular rhythm of the heart's action, with pulsation of the arterial tubes, and flapping of the valves at the moment of regurgitation. Of course by working the pressure irregularly you can also produce different varieties of abnormal action of the circulatory system. By applying your ear to the auricle, you hear the sounds of the heart, which M. Marais, from the demonstration afforded by his caoutchouc progeny, wishes us to believe are produced solely by the action of the valves. By constriction of the aortic tube, by attaching a small pouch to one of the arteries as an aneurism, etc., he produces the concomitant morbid sound, and so on. He can also apply his pulse instrument to the tubes and show the modifications presented by the pulse in various lesions of the vascular system. Of course it will be seen from the above description that this apparatus does not comprise the entire circulation.

M. Civiale, *Hôpital Necker*, has just submitted to the Academy of Medicine his annual statement of the cases treated by him for calculi in the bladder. He referred to the success of Brodie in this operation, and of the comparative non-success of lithotomy, and stated that the publication of his own cases for 1860 had impressed some of the English surgeons so deeply that they had come across to Paris in quest of the necessary instruments, and for instruction in the employment of them. His statement comprehended 66 cases; 52 suffering from stone for the first time; in the remaining 14 the calculi had been reproduced

after previous treatment; this includes both hospital and private patients, the latter forming the majority, as he has only about a dozen beds at the Necker.

Of these cases, 61 have been operated upon: 51 by lithotrity, of which 49 were successful; 10 by lithotomy, of which 6 were cured, 4 died; 5 had not undergone operation, because the calculi were too large, and the urinary organs had suffered too much; of these 2 are dead, 3 are still living. Of the 10 operated upon by lithotomy, this measure was resorted to in some from necessity and in some from choice.

These cases joined to those of the preceding year (1860), give a total of 120 (115 men, 5 women) with the following results: 88 underwent lithotrity, of whom 79 are cured, 3 are dead, and 6 retain functional disorders, dependent neither on the stone nor on the operation: in 17 lithotomy was performed, of whom 8 are cured, 7 are dead, 2 have fistulæ: 15 not operated upon, of whom 9 are living, and 6 dead.

These statistics certainly speak very strongly in favour of lithotrity, at least as practised by Civiale, whatever it may be in the hands of others; and the slight degree of pain inflicted, together with the apparent ease and facility with which he explores the bladder, seizes the stone, and crushes it, tends very much to strengthen this impression, especially when the formidable operation of lithotomy is contrasted with this one. Of course he does not advocate the employment of lithotrity in all cases indiscriminately, as the above statement shows, but prefers lithotomy in cases where tumours, the extreme hardness or bulk of the stone, etc., interfere with the necessary manœuvres of lithotrity.

Trousseau had a very remarkable case, which he believes to be unique, of phlegmasia alba dolens of all four extremities simultaneously. It existed in a woman, æt. 33, labouring under phthisis; she had no heart disease. The phlebitis seemed to be confined entirely to the superficial veins, with the exception of the two femorals which were also more or less affected. Clots apparently formed and plugged up the veins, which became hard cords, then absorption gradually took place, and the blood once more circulated freely. There was always a certain amount of œdema present, with pain increased on pressure along the course of the veins affected. The disease was of very slow progress, and of a wandering nature, as it had been going on in this manner for about a month; at one place a painful swelling forming in the track of a vein, increasing in size and painfulness, and in the course of some days disappearing, while another was forming at another part. The patient at last expired a few days ago, and, on making the post-mortem examination, the lungs were found to be completely riddled by softened tubercle; the heart was sound; the superficial veins of the upper extremities were patent, resolution having taken place some days before death; those of the lower limbs were plugged with fibrinous material, which formed cords in their interior, softened in some places at the centre. At the bifurcation of the two iliacs of one side was a large clot almost completely free, and which, had the patient lived a few days longer, would probably have given rise to embolism. Trousseau had also a short time ago a case of *eclampsie saturnine* which proved fatal. The patient entered the Hôtel Dieu, reporting himself as a hairdresser's assistant, with symptoms which at first sight did not appear compatible with his occupation, as they clearly indicated lead poisoning; they were colic, with obstinate constipation, epileptiform convulsions, of which he had six attacks the first night in hospital, profound anæmia, pallid complexion, and he had altogether the appearance of one so affected. His occupation, however, appeared to preclude such a diagnosis; but, on further inquiry, it was found that he had been much given to *absinthe*

drinking, and that losing one situation after another on account of this propensity, he had at last betaken himself to a manufactory of white-lead, where he had only wrought nineteen days when he was seized with lead colic, for which he was admitted into *La Charité*. On his dismissal he again returned to his employment, but only for about a month, as he was once more attacked with the same malady, and now entered the Hôtel Dieu, where, after six days of convulsive attacks, he died. It was possible that lead poisoning had been superadded in this case to a previously existing epileptic condition; but the want of definite information regarding his antecedents left this point undetermined; Trousseau, however, inclined to the opinion that it was purely a case of *eclampsie saturnine*. On analysis of the various organs, a considerable amount of lead was found in them, as also in several parts of the nervous centres; but as the professor has not yet communicated to us the details, I shall give them in my next, with the account of the post-mortem examination.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1861-2. MEETING V.

Wednesday, 5th March 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

I. INJURIES OF THE HEAD—LACERATION OF THE BRAIN.

Dr Haldane showed portions of the brain and its membranes, from the bodies of two persons who had died in consequence of having sustained injuries of the head. The cases presented a marked contrast, in so far as one of the injured persons died in the course of a few days, while the other survived for several weeks.

The *first* case was that of a young man, a slater, who, on the 26th of February, fell to the ground from the roof of a house, a height of not less than sixty feet. The house was situated in a narrow wynd, and it is probable that his fall was partially broken, by his striking against the wall of the opposite house. He was taken up in a state of insensibility and brought into the Royal Infirmary, where he was under the care of Dr Gillespie. On admission, he presented all the symptoms of concussion; there was much ecchymosis of the left side of the face; a wound of the left cheek exposed the malar bone; there was a fracture of the left forearm; and a little blood oozed from the right ear. Two days after the accident he recovered consciousness, and complained of pain in the back of the neck. On the morning of the 2d of March he seemed to be going on well, was quite conscious, and recognised and spoke to his friends. For two days after admission there had been retention of urine, but he was now able to pass it freely. Towards evening, however, his pulse rose, becoming so rapid that it could not be counted, and the respirations were sixty in the minute. He gradually became comatose, and died at one o'clock in the morning of the 3d of March, five days after receipt of the injury.

On examination of the body, blood was found infiltrated into the substance of the left temporal muscle. When the skull-cap and dura mater were removed, a very small quantity of blood was found on the surface of the right cerebral hemisphere; but a vessel on the surface of the brain in the right temporal region was completely torn across, the open ends of the vessel being, however, closed by pretty firm clots, which extended on each side to the nearest collateral branch. On removing the brain, some blood was found in the middle fossa of the skull on the right side, and there were two lacerations of the substance of the anterior part of the middle cerebral lobe. The lacerated portions were each about the size of a filbert, and were infiltrated with blood. On microscopic examination of the softened cerebral substance, a little granular matter and a

few compound granular corpuscles were seen. A fracture extended across the petrous portion of the right temporal bone, and the membrana tympani was found lacerated. On the left side, a fracture commenced in the lower part of the parietal bone, just above its junction with the mastoid part of the temporal, extended through the squamous portion of the latter bone, and the great wing of the sphenoid, separated the right anterior clinoid process, and terminated in the roof of the orbit. There was an abscess over the left malar bone, and the bone was found exposed, and a fissure ran across it. On examining the spinal column, blood was found extravasated into the subarachnoid cavity on the surface of the cord throughout nearly its whole length; the substance of the cord was somewhat softened. Dr Haldane remarked, that this case illustrated some important points in the pathology of injuries of the head. In the first place, it was worthy of remark, that though the patient had fallen on the left side of the head, and though the fracture of the bone was more extensive on this side, the brain had sustained injury on the opposite side, where a tolerably extensive laceration of its substance had occurred. It was very often noticed, that the contrecoup inflicted more injury than the direct shock. In the second place, it was interesting to notice how the hæmorrhage from the lacerated vessel had been arrested. No doubt the vessel had been torn across at the time of the fall; but, during the state of concussion which followed, the circulation had gone on very feebly, scarcely any blood had been poured out, and there was an opportunity for the formation of a coagulum, which proved sufficient to restrain farther hæmorrhage, when reaction set in. The case illustrated well the impropriety of employing stimulants or of attempting to restore the activity of the circulation, soon after the receipt of injuries of the head.

The *second* case was that of a woman, fifty years of age, of intemperate habits, who fell down stairs on the 3d of January, and in consequence injured her head. She was admitted into the Infirmary, under the care of Mr Spence, in an unconscious condition. There was a wound of the scalp over the right parietal bone, from which a good deal of hæmorrhage took place. During the next three weeks she remained in an unconscious condition, the only evidence of feeling she gave being when a blister, which had been applied to the nape of the neck, was dressed. There was paralysis of the right side of the face, and the whole of the right side of the body was evidently weak. Four or five days after admission, convulsive twitches of the muscles of the right side of the face manifested themselves. On the twenty-first day after the accident, consciousness returned. For the next few weeks she appeared to be going on favourably, and power appeared to be gradually returning to the paralyzed parts. Chest symptoms, however, manifested themselves; there was much oppression of the breathing, crepitation was heard over various parts of the chest, and she died on the 2d of March, nearly nine weeks after the receipt of the injury. On examination of the body, a piece of exposed opaque-looking bone of the size of a sixpence was seen, corresponding to the wound in the scalp, a little behind the right parietal protuberance. The inner surface of this portion of bone had the same opaque appearance, but there was no fracture in this situation. Over the right cerebral hemisphere, there was a good deal of gelatinous subarachnoid effusion, and on the surface of the membrane were some brownish streaks and patches, the remains of a very scanty hæmorrhagic extravasation. A layer of blood covered the whole upper surface of the left hemisphere; in some places it was fully two lines in thickness, and had produced marked compression of the hemisphere. The blood was firmly coagulated, and was of a dirty russet-brown colour. When the brain was removed, this layer of blood was found to extend down to the base of the brain, and there was a laceration of the cerebral substance over the posterior part of the anterior, and the anterior part of the middle lobe. The cerebral substance in this situation was soft and of a yellowish-brown colour. On microscopic examination, the softened cerebral matter was loaded with compound granular corpuscles, and a large quantity of a bright yellow granular pigment was visible, but there were no crystals of hæmatoidin. There was a separation of the lambdoidal suture on the left side,

and a fissure extended along the left side of the base of the skull, running across the petrous portion of the temporal bone, and terminating in the great wing of the sphenoid. The left lateral sinus contained an adherent, softened, fibrinous clot, converted in great part into a purulent-looking matter. On examining the lungs, they were found to contain numerous secondary deposits, in some places firm, in others softened. Dr Haldane considered this case one of great interest. As the direct result of the injury, extensive hæmorrhagic extravasation and laceration of the cerebral substance had taken place. The resulting compression gave rise to insensibility, and there was paralysis of the left side of the body. The occurrence of spasm of the muscles of the affected side, was no doubt the result of inflammation of the injured cerebral matter. The brain, however, had gradually adapted itself to the pressure, and three weeks after the injury consciousness returned; and but for the occurrence of thrombosis of the lateral sinus, recovery from this very severe injury might probably have taken place. A fibrinous clot, however, formed in the sinus, softening took place, portions of the clot were washed away, and became impacted in the branches of the pulmonary artery, and occasioned the fatal disease of the lungs.

II. BLOODLESS REMOVAL OF PORTIONS OF THE TONGUE BY MEANS OF THE ÉCRASEUR AND THE GALVANO-CAUSTIC WIRE.

Dr Alexander R. Simpson exhibited an epithelial ulcer of the tongue, which he had that day removed by means of the galvano-caustic wire, the first time probably when the instrument had been used for this purpose in Edinburgh, if not in Britain. Dr Simpson's attention had first been directed to this mode of operating by the favourable results of Professor Middeldorpf of Breslau, who had improved the instrument considerably, and whom Dr Simpson had seen remove by means of it a large polypus from the back of the pharynx, with the most satisfactory result. Dr Simpson had also been shown preparations of the cervix uteri and of various tumours and morbidly-affected structures which had been removed by the same gentleman; and having also seen the instrument employed in Vienna and other German medical schools, he had been impressed with the value of the instrument for effecting the removal of vascular growths or of tumours from such a vascular organ as the tongue, where the occurrence of hæmorrhage often caused much trouble. In the present case the only question had been whether the écraseur or the galvano-caustic wire should be employed. Some months ago, he had removed an epithelial ulcer of the tongue by passing two curved needles crucially below it, and passing round them the chain of the écraseur. Chloroform had been administered, and the whole growth had been removed without the least pain, or the loss of a drop of blood. About the same time, he had seen another operation upon the tongue in a case where a portion of the organ was removed on account of malignant disease; the knife was employed, and much bleeding occurred, and Dr Simpson had been strongly impressed with the superiority in such cases of the écraseur, on account of the simplicity and bloodlessness of the operation. As the ulcer in the present instance was situated near the root of the tongue, in a situation where it would have been difficult to apply the écraseur, he had determined to use the galvano-caustic wire. A loop of platina-wire was passed through the tongue, towards its root, and below the base of the epithelioma; a stream of galvanism was passed through the wire so as to render it red-hot, and in this way a flap of considerable size was cut off the side of the organ. The loop of wire was then applied round the base of this flap; but on attempting to tighten it, the wire gave way, and its removal was effected by means of an écraseur. A hard nodule having been observed to be left in the side of the tongue, it was seized with a volsellum, and surrounded with a loop of the galvano-caustic wire. The teeth of the volsellum tore a little artery, which began to spout. The wire through which the current was passing lighted up the cavity, and showed clearly the bleeding point; and then it could easily be applied to the torn artery, so as instantly to arrest the hæmorrhage. He doubted whether he had succeeded in removing the whole of the diseased mass; but he believed that any morbidly

affected surface that might have been left had been so thoroughly cauterized that in all probability it would afterwards slough out. Dr Simpson had used the galvano-caustic apparatus in various operations, such as the removal of hæmorrhoids, and for the removal of a peculiar form of pediculated fatty tumour (which was exhibited) situated in the cutaneous tissue of the hip. Of course the *écraseur* and galvano-caustic wire were only comparable under particular circumstances. In general the *écraseur* fulfilled every indication; but in some situations it was difficult to apply the chain, whereas the platina wire, being pliable, was easily adjusted.

III. CANCRUM ORIS.

Dr Keiller read a paper on cancrum oris, which will be found at page 919 of this number of the Journal.

The *President* asked Dr Keiller if he had ever employed vegetable charcoal in the form of poultice for correcting the fœtor in cases of cancrum oris. Some years ago, an epidemic of hospital phagedæna had occurred in Edinburgh, and after employing mineral acids and various other caustics, he (Mr Spence) had tried charcoal, and found it most effectual. He had at first been rather prejudiced against it, but had found it more effectual than anything else for getting rid of fœtor, and producing a healthy action of the sores. Mr Spence thought that cancrum oris was not so much confined to a particular age as Dr Keiller had stated; he remembered a case in a girl of fourteen or fifteen, which presented all the general characters of the disease, and which terminated in death. He also thought that the affection was not so constantly fatal as was generally stated, as he had pretty frequently been called upon to operate with a view to removing deformities which had been the result of the disease.

Dr Coldstream, about three months ago, had seen a case of the disease in a fine boy, thirteen years of age, who lived in the country, and was the son of parents in good circumstances. He had had an attack of gastric fever, and was in consequence much reduced; in the fifth week of that disease stomatitis came on; it progressed rapidly; both cheeks became affected, and the patient rapidly sank. Dr Coldstream had met with the disease several times in children six or seven years old; in one case it supervened upon scarlet fever, and a portion of the jaw necrosed and came away.

Dr W. T. Gairdner stated, that the only case of cancrum oris he had seen was one where both cheeks were affected to an enormous extent, and which very clearly illustrated the marked association of the disease with an unhealthy locality. In a close, which terminated in a *cul de sac*, but which was now much improved, there was formerly at the end of it a small opening for the escape of the foul water; the water was apt to accumulate, and the two houses at the end of the close were constantly liable to be flooded, and in fact frequently were so. A child living in one of these houses took measles, and, while recovering, was attacked with cancrum oris, affecting first the one cheek and then the other. Dr Gairdner remembered well the feeling of utter powerlessness to check the disease which he experienced. The child died about the eighth day of the disease, and at that time a slough, the size of a crown-piece, extended through the whole thickness of one cheek, while in the other there was a similar slough of the size of a penny. The child had previously been healthy, though he, as well as the other members of the family, had always an air of debility.

Professor Simpson might state, that with regard to the disease being influenced by locality, he remembered a case which occurred in Queen Street in a child five or six years old, and which proved very speedily fatal. The disease had not been preceded by fever; the child turned ill, the cheeks and lips had a pale, glazed appearance, a blister formed, sloughing came on, and extended rapidly. The child inhabited the nursery, in the upper part of the house, and there was no reason to believe that there was any contamination of the air. It was true that now-a-days we were more particular, and knew that the air even in an upper story might be vitiated, by the neighbourhood of a water-closet for

instance; but it was certainly singular that a previously healthy child, belonging to a good family, and residing in a healthy locality, should have been attacked in this way. Dr Simpson had often thought that there was one very remarkable circumstance regarding *cancrum oris*; surgeons always told us that wounds of the face healed very rapidly on account of the high degree of vitality of the parts; why then should gangrene be so apt to occur in that situation?

Dr Moir had met with only one case of the disease in his own practice. It occurred in a child inhabiting an airy and healthy locality. One of the parents was healthy, the other was of a highly strumous constitution. The child had an attack of scarlatina, and during his convalescence *cancrum oris* came on, and terminated fatally in about eight days. Nitric acid was applied, though, perhaps, not so freely as in the manner recommended by Dr Keiller.

Mr Benjamin Bell, some years ago, attended a child living in a healthy locality, and in comfortable circumstances. The patient had measles, the eruption was well out, and everything appeared to be going on favourably, when suddenly, about the fourth or fifth day of the disease, two or three fingers of each hand, and two or three toes of each foot, began to slough and turn black. One finger became completely gangrenous. The eruption of the measles continued well out, but the pulse indicated great prostration, and the child died next day; unfortunately no post-mortem examination could be obtained. Mr Bell thought that probably some kind of embolism had occurred by which the circulation in the affected parts had been obstructed. The idea had occurred to him that in *cancrum oris* there might be some local obstruction which cut off the vascular supply, and so induced gangrene. With regard to treatment, Mr Bell would hesitate to give iron in large quantities, and wine to a young child. The disease was evidently not connected with mere weakness, and in the case of gangrene occurring in an adult in any other part of the body, we would not employ such treatment. We would rather order a milk diet, and endeavour to soothe the system by every means in our power. He would, however, by all means give chlorate of potash, which, in the milder forms of stomatitis, it had been truly said, acted almost as a specific; and if it succeeded in the milder cases he thought it was likely to do good in the more severe. Mr Bell doubted whether the favourable result in the successful cases was due to iron and stimulants. When strong nitric or hydrochloric acid was freely applied, a portion of the cheek was permanently destroyed; and every one knew what a depressing influence the presence of a slough exerted upon the system. Mr Bell could speak as to this from personal experience. He had once on one of his fingers a slough about a square inch in extent; while it was present the sense of depression was very great; but so soon as it was gone he felt as if a load had been removed. He believed, therefore, that the very existence of a slough, however produced, had a depressing effect, and he thought, therefore, that nitric acid might sometimes be prejudicial. The result of the cases (one in seven only successful) did not encourage him to adopt the treatment recommended.

Professor Simpson observed, that the idea suggested by Mr Bell as to the dependence of *cancrum oris* upon embolism had formerly occurred to himself. He thought, however, that its correctness was disproved in this way; in order that a vessel of a certain size should be obstructed, it was necessary that a plug of a certain size should be present; but so many of the vessels which go to the lips and cheeks were of the same size as innumerable arteries, that the chances seemed a thousand to one against the particular vessels of the cheek being obstructed.

Dr Keiller observed, with regard to the treatment of the disease, that he agreed with Dr West in putting no confidence in chlorate of potash in the severe form of the disease, although it was right to state that some people considered it efficacious. With regard to deformity being produced by nitric acid, Dr Keiller would merely state that in the case which terminated successfully, and where the acid had been employed, there was no mark whatever left by it at the time when the child left the hospital. There was a slight cicatrix and

puckering in the inside of the cheek, but which, he believed, would in great part disappear. Dr Keiller believed that unless the disease was entirely destroyed the child would die.

Dr P. H. Watson observed, with regard to the use of caustics in phagedena, which was still extending, that the application of strong acids appeared to be the most certain mode of checking the further progress of the disease. But when a part died *en masse*, and where there was no definite line of separation, it was often difficult to know how to apply the acid to the parts where it would be useful, that is to say, to the tissues about to die, but not yet dead. In the case of cancrum oris Dr Watson believed that nitric acid proved useful in another way, namely, by consolidating the dead parts, and preventing their further decomposition. The parts acted on were converted into a mass which acted upon the constitution differently from the original slough; a process of foetid decomposition was got rid of, and the infection of the system was thereby prevented. Dr Watson believed that the disease might occur in older persons than was generally supposed. When in the Crimea he had himself suffered from dysentery, and had been greatly reduced by it; at this time he had a tooth extracted, inflammation of the gum took place, sloughing phagedena supervened and extended to the cheek, which was nearly perforated; in consequence several of the nervous fibres had been destroyed, and there had resulted paralysis, so far as sensation was concerned, of one-half of the lower lip. The process had been precisely similar to cancrum oris, though fortunately it had not gone so far. Dr Watson also thought, from the number of times he had been called on to operate on account of deformities resulting from cancrum oris, that recoveries from the disease were not very rare among the poor. He had lately been called on to make a new nose in such a case.

The President stated that Dr Watson's remark reminded him of a case where the whole of one side of the face, and a portion of the upper jaw, had been destroyed in childhood by cancrum oris. In this case he made a new cheek, and a new nose, the flap for the latter restoration being obtained from the arm.

Professor Simpson alluded to the gangrene which occurs among workers in phosphorus. When experimenting upon anæsthetics, he took a substance, the use of which was followed by severe pain in the face, in consequence of which he was confined to bed for some days. A friend suggested that the substance taken probably contained phosphorus; it was analyzed, and a large quantity of phosphorus was found in it.

Dr Watson stated that in the gangrene among workers in phosphorus, the disease began as an inflammation of the periosteum, and might extend to the bone and to the soft parts. It was not properly gangrene of the soft parts, which only opened up to allow the escape of the dead bone.

IV. REPORT ON EPIDEMIC AND ACUTE DISEASE IN EDINBURGH AND NEIGHBOURHOOD FOR JANUARY 1862.

Edinburgh, February 6, 1862.—The council of the Medico-Chirurgical Society beg to submit to the members a brief report on the state of epidemic and acute disease since the commencement of the year 1862, in conformity with the plan formerly announced for the periodic recording of facts bearing on this subject. The returns placed at the disposal of the council have not, indeed, been so numerous as is desirable; but as it is quite apparent that this springs from the want of a clear understanding as to the kind of deductions intended to be made from these returns, the council proceed to give an example, however inadequate, of the kind of results at which they are aiming, in the hope that on future occasions they may be able to do so with more fulness and method, from a greater number and variety of returns made by the members.

The only epidemic diseases, properly so called, which the council can ascertain to have existed during the month which has elapsed, have been scarlet fever, hooping-cough, enteric (including typhoid or gastric) fever, catarrhal fever or influenza of moderate intensity, and, latterly, some cases of dysentery or

diarrhœa in a few localities. Typhus fever, the old epidemic scourge of this city, has been hardly observed in Edinburgh for many months past¹ (very little, indeed, for the last two years). The council believe that a remarkable exemption from this disease had also been experienced in London up to a very recent period: they are informed, however, that during the last two months there has been a very considerable increase of epidemic typhus in London, after a period of four years during which it had been extremely rare. In Glasgow there has also (according to information received by the council) been a rather considerable increase of typhus fever during the last year; and neither in Glasgow nor in Dundee does there appear to have been nearly so complete an exemption from the disease at any period as in Edinburgh of late. How long this immunity may continue it would be vain to anticipate; indeed, unless the epidemic tendency at present observed in the great centres of Glasgow and London shall receive a check, it can hardly be expected but that Edinburgh, too, will ere long experience a return of a disease from which she has been probably more free of late than at any time for more than forty years.

The form of continued fever which appears to have replaced typhus in Edinburgh for some time past, and which certainly seems to have been to some extent gaining ground in Scotland of late years, although probably brought into a more prominent position than it would otherwise have occupied by the disappearance of typhus, is in all essential respects identical with the typhoid fever of Louis and Jenner, the abdominal-tyhus of various German authorities, and the enteric fever of several English and American writers. It is characterized by a marked tendency to diarrhœa and other derangements of the intestinal canal; often also by pulmonary symptoms, and by great irregularity in the febrile phenomena properly so called, which are apt to be both extremely insidious in their commencement, and of very uncertain duration. Most of the cases popularly known as "gastric fever" probably belong to this type; also some forms of so-called "infantile remittent;" and perhaps a proportion of the cases reported as "diarrhœa" or "dysentery" to the Registrar-General. The specific eruption of rose-spots can be recognised in the majority of cases, if carefully watched for from day to day. It is often, however, scanty, and may easily escape attention.

Most of the cases of this fever reported since the beginning of the year have occurred without any distinct epidemic connexion, in various parts of the city and neighbourhood. The only place which has been reported as yielding a large number of cases for some months past is Penicuik, in which there is little doubt that the disease is owing to imperfect drainage. In one locality in Edinburgh (Hay's Court, Fountainbridge), in which 9 cases of this fever had occurred, with 4 deaths, among a population of only 40 or 50 persons, an application was made to the authorities by Dr Grainger Stewart, on the ground of the imperfect drainage and bad ventilation of the houses; and it is satisfactory to be able to record that a plan for improved drainage is to be carried out immediately.

Scarlet fever, and to a less extent hooping-cough, have prevailed in many parts of the town; hooping-cough, on the other hand, has been more extensively prevalent in Leith, in which scarlet fever has scarcely been observed at all. Sixty-three cases of scarlet fever have occurred in Donaldson's Hospital, with 3 deaths. The prevalence of this epidemic among dispensary patients seems to have been scarcely in proportion to its frequency and severity among the upper and middle classes.

The catarrhal affections have been numerous, but not very severe. Chronic diseases of the heart and lungs have generally been aggravated, but, according to a report from the Infirmary, the deaths have been few in proportion to the number of cases under treatment.

¹ There has been only one case in the Royal Infirmary since November last, and this was imported from Kirkcaldy.

A few cases of measles, and one or two of chicken-pox, have been observed in the practice of the Dispensaries; but it is remarkable that a careful inspection of the books of the Royal Public Dispensary shows only one case of small-pox for several months past. No case of small-pox has occurred in the Royal Infirmary for a considerable period, and no case is known to any member of council during the present session of the Medico-Chirurgical Society. It is evident that this disease has been extremely rare in Edinburgh for some time past.

The other diseases that occur in the returns are:—Pneumonia and pleuritis, a few cases, mostly isolated; erysipelas (sporadic); rheumatic fever; scurvy (once); croup (once); ague (once); jaundice (several); carbuncle (once); tonsillitis (once); cerebro-spinal meningitis and acute hydrocephalus (several). Several cases of delirium tremens (but fewer than usual), occurred shortly after New Year's Day in the Royal Infirmary. Several practitioners notice influenza; while others apparently regard the catarrhal affections as having no specific character.

V. CASE OF MR OLIVER OF PRESTONPANS, LATE OF GARNKIRK.

The *President* alluded to the case of Mr Oliver, who had recently to defend himself against a charge of alleged malpraxis, and where the opinion of a bone-setter was received by the sheriff as if he had been a regular medical practitioner (see last Number of this *Journal*, page 886.) Mr Oliver had been put to an expense of nearly eighty pounds, and it was proposed to make a subscription to free him from at least a part of this. This proceeding was adopted not merely to relieve Mr Oliver from the expense, but as an indication of the feeling of the medical profession in such cases.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING IX.

April 24, 1861.—Dr M'COWAN, in the Chair.

I. POST-PARTUM HÆMORRHAGE AND SYNCOPE.

Dr Bruce gave the following history:—"Mrs F. sent for me on the evening of 20th March last, being then for the first time in labour as she considered. On visiting her, I found that she had been complaining of pains all the previous day, but of an irregular character, and that she was considerably advanced in her labour. The presentation was natural. After waiting some time, and finding the pains to be ineffective, ergot was had recourse to, but with no apparent effect, and for two hours little or no progress was made; but after that the pains changed their character, becoming stronger and more effective, and continuing until delivery, which took place about an hour after, about four A.M. of the 21st. On examining, about a quarter of an hour afterwards, to ascertain if the placenta was being expelled, I found that there was more than the usual amount of discharge, and that the placenta had not separated from its uterine attachment. The employment of pretty firm traction was insufficient to effect its dislodgement; and finding that the hæmorrhage continued, I thought it advisable to introduce the hand into the vagina, and to extract the placental mass without delay. This was effected with considerable difficulty, as it was firmly held by the uterus; there being a kind of hour-glass contraction superiorly, and the placenta itself being rather friable. After this very little discharge was noticed, and the uterus contracted well. However, in a very short time the patient complained of faintness, and of not being able to see, and yawned frequently; she became very pale; her face and hands were cold, and the pulse was almost imperceptible. Whisky was immediately had recourse to, being given pretty freely and with marked benefit; the pulse became stronger, and she said that she felt much better. But in a short time the alarming symptoms returned, and that without any recurrence of hæmorrhage, which, in fact, had never been

excessive. Whisky was again administered, and with partial success for a time, as she said that she felt better; ergot was also given, and the uterus kept well contracted. This improvement was only momentary, as she once more relapsed: her mind began to waver; she talked quite incoherently, tossed about the bed, and did not know any one around her: sometimes the pulse could not be recognised at all, and at other times it was found to be rapid and extremely weak. The repetition of the stimulant did not appear to have any further effect in increasing the strength of the pulse, and her condition appeared to be very critical.

"At this period, Dr Somerville, being in the neighbourhood, kindly saw the case along with me, and he remarked that although the pulse was so very weak, the countenance was not so blanched as we would expect to find from hæmorrhage, and we agreed that the amount lost was insufficient to account for the symptoms, and that 'shock' must have had something to do with it. I once attended a patient who was affected in a similar manner, but in whom the prostration was fatal, and that without the occurrence of any hæmorrhage whatever. The patient was now supplied with cool fresh air, and a little cold water given to drink, with now and then the addition of a little whisky, for although unconscious she could still swallow.

"No further change occurred in her condition, except that she became quiet, the pulse continuing to be almost imperceptible. Her respiration was slow, but quite natural. Having remained with her a considerable time, and finding her to continue much in the same state, I ventured to leave her for a little, first giving an opium pill, and leaving directions to supply her with a little whisky now and then, and to get ready some strong beef-tea. I was sent for about half an hour after, as her friends could not rouse her at all or get her to take anything; and just before I arrived she had taken a loud fit of screaming, which had still further alarmed them, but she was quite quiet when I saw her, and more as if in a natural sleep. She seemed quite insensible to any queries put to her, but her pulse was slightly stronger, and I thought it better not to disturb her by giving her anything. She lay quiet for about an hour, and then began to cry out loudly, as she had done before, when, getting alarmed, they sent for me again; but there was no reason for their fears, as she was lying much in the same condition as I left her before, still quite insensible to external objects, and now and then crying out and talking incoherently. I merely directed that she should not be disturbed for some time longer, but allowed to sleep if so inclined. After this she slept quietly for some hours, when the attendants were enabled to get her to swallow some beef-tea. On visiting her about three P.M., I found her quite sensible and rational, able to take anything offered to her, and much refreshed. The pulse was then stronger and fuller, reaction having taken place. Next morning she felt well, but had not slept at night; she was restless all day, and in the evening her pulse was 130 and weak. Ordered an opium pill.

"For a day or two there was some uneasiness in the abdomen, but this gradually subsided; the pulse became less frequent, and by the fifth day was down to 90. In fact, she continued to improve every day, and made an excellent recovery, being able to be up almost as soon as in an ordinary case, proving, I think, that her critical condition had not been owing, or at least only partially so, to the hæmorrhage."

Dr Alex. R. Simpson agreed with Dr Bruce in thinking that the anomalous symptoms exhibited by his patient were due rather to the impression on the nervous system produced by a severe labour, than to the comparatively trifling hæmorrhage that had ensued. His uncle, Professor Simpson, had mentioned a somewhat similar case at a recent meeting of the Society; and with regard to that case, he (Dr A. R. S.) might now be allowed to add, that the mother of the patient had suffered in the same way on the occasion of her last confinement, now many years ago, from a series of fainting fits after labour, without having lost any unusual quantity of blood. Subsequently to her confinement she had enjoyed for some time a fair amount of health; but she had now for several years been subject to occasional attacks of fainting, which never amounted to

total syncope, but which were attended with great feebleness of the pulse and complete prostration, and which were probably due to weakness of the heart's action.

He had that morning made an autopsy, the results of which he thought were calculated to throw some light on these cases of post-partum syncope. The body he had dissected was that of a lady under forty years of age, the mother of seven children, whom he had been called to see six weeks before, in his uncle's absence, in consequence of an escape of blood which had taken place from the vagina on her raising herself to get out of bed. She was then supposed, but without much certainty, to be at the close of the seventh month of her eighth pregnancy. Only a small firm clot had escaped; the os was quite closed, and there were no pains; but the patient was very nervous and anxious. She had got over her fright, and had moved to another house, and was making arrangements for going for a little to the country, when she suffered another slight loss of blood, fifteen days subsequently to the first. Three weeks afterwards, another small clot was expelled, and on the preceding Thursday (April 18th), Professor Simpson was sent for to see her early in the morning, as a considerable gush of blood had taken place. The os uteri was then sufficiently dilated to enable him (Professor S.) to feel the margin of the placenta slightly overlapping it. No more hæmorrhage took place at that time, and when Professor S. saw her on the following Saturday evening, she was quiet and well, although she was very anxious and declared her conviction that she would never "get over it." On the following morning, Professor S. had again seen her, and as she had been losing more blood, he ruptured the membranes so as to allow the liquor amnii to escape and induce full uterine contraction. Up till this time the loss of blood altogether had been but slight, and no more hæmorrhage had occurred till the time of the delivery. Labour pains set in shortly after 8 P.M. of the same day (the 21st); shortly after which time Professor S. was again in attendance, and having found matters progressing quite well and naturally, he withdrew to wait in another room. At midnight he was again summoned to his patient's bedside; and although the pains were going on very regularly, and no hæmorrhage was taking place, the pulse was so alarmingly quick and feeble and intermitting, that he sent to request the assistance of Dr Moir, who was intimate with the patient, who was present with him till the last. After Dr Moir's arrival, chloroform was administered to the patient, and as she was brought under its influence, Professor S. was much struck with finding the pulse become slower, steadier, and more regular; and in about half an hour a living child was born, and the placenta was soon expelled without more than the usual escape of blood. The effects of the chloroform passed off speedily after the birth of the child. The uterus contracted naturally; but as the patient was very faint and weak, a sponge dipped in perchloride of iron was applied to the cervix, lest any oozing of blood should take place from its surface. Not another drop of blood had escaped; stimulants had been freely administered, but the patient never rallied, and, two hours subsequent to her delivery, she died. At the post-mortem examination, made fifty-two hours afterwards, the abdominal organs were found to be all normal and healthy; and the uterus, though it had then become soft and flabby, seemed to have been completely contracted, and presented no indication of having been the seat of hæmorrhage. There was no blood, either fluid or clotted, in its cavity. The lungs were also healthy; but the heart was in such a morbid condition as to have led them to conclude that the patient had died from failure of its action. It was pale and soft, and freely overlaid with fat, and contained a quantity of loosely coagulated blood. Its walls were unusually thin, particularly on the right side, where the wall of the right ventricle was as thin as the coats of the vena cava. On microscopical examination, he (Dr A. R. S.) had found the muscular fibres of the heart to have undergone fatty degeneration very extensively, and to a degree very remarkable in so young a woman. So that, from all the circumstances of the case, it appeared that, while the patient's strength might have been somewhat

impaired by the repeated slight losses of blood, and also, perhaps, by the restraint imposed on her during the last six weeks of her life, with a view to prevent their recurrence; yet her death was due not to anemia, but to the exhaustion attendant on the process of delivery, and the consequent failure in the action of a feeble, fatty heart. For during the progress of delivery, the parturient female really was subjected to such hard labour, and underwent such an amount of fatigue as no one suffering from any cardiac affection could with safety be exposed to, and which it was not surprising to see ending fatally in one whose heart had undergone extensive fatty degeneration.

Dr Thomas A. G. Balfour said, he had seen a patient who suddenly began to complain, nine days after her confinement, of a stifling feeling and of tightness in the chest. She never rallied; and on making a post-mortem examination, he (Dr T. B.) had found the cavity of the pericardium filled and distended with blood, which had escaped from some perforations near the root of the aorta. There were three patches of atheromatous deposit in the intra-pericardial portion of the aorta, each about the size of the head of a pencil, and at one of these points the vessel had given way and allowed the escape of blood into the pericardium.

Dr Figg mentioned a case where a patient died suddenly during a very severe labour; and added, that in the church at Accrington there was a tablet to the memory of one of the Peel family, who had died in that way. With regard to Professor Simpson's observation as to the effect of chloroform on the pulse of his patient, he (Dr Figg) begged to remark, that he had several times had occasion to notice the same effect of chloroform in steadying a quick, uncertain pulse. When the drug was new he used to watch its effect with great care, and had found that at first it seemed to stimulate the heart's action in the same way as morphia and alcohol, although its effect in large doses was to suspend the action of the heart.

Dr M'Gowan stated that he had been assisted by Dr Littlejohn in dissecting the body of a servant-woman, who had died very suddenly whilst cleaning a grate, and who it was suspected had been the subject of some foul play. But, as in Dr Balfour's case, death had resulted from the escape of blood into the pericardium from a small perforation in the root of the aorta.

II. TWIN ABORTION.

In the absence of *Dr Moir*, the Secretary showed a preparation of two placentæ which had been expelled, along with a quantity of coagulated blood, in a case where a lady had aborted of twins at the fifth month. Some of the coagula were very firm, and fitted into a depression on one of the placentæ, from which hæmorrhage had probably taken place, so as to interfere with the circulation in the placenta. Death of the corresponding fœtus, and the expulsion of itself and its twin, had resulted. Perhaps the most remarkable circumstance in connexion with the case was, that the heart of the surviving fœtus continued to pulsate for more than an hour after it had been separated from the mother.

III. TEDIOUS LABOUR FROM INTRA-UTERINE HYDROCEPHALUS.

The Secretary showed a preparation of the head of an infant which had been enormously enlarged in consequence of intra-uterine hydrocephalus, and which presented two perforations—one behind the left ear, the other above it. The preparation had been sent to Professor Simpson, by Dr Cahill of Berwick-on-Tweed, with the following history:—"The child presented by the breech, and I had rather more difficulty in delivering the shoulders than I ever had in any previous case. Suspecting the cause after it became immovable, and after an examination under chloroform, I sent for Dr MacLagan. We agreed to puncture the head. I introduced my left hand first, towards the sacrum (the woman lying on her left side), and, passing the instrument up under it, made the anterior puncture at the ear. Much water escaped, but still delivery was impossible. I then introduced my right hand up the child's back under the pubis, and passing the instrument up, made the posterior puncture, but with no good effect, except

that again a large quantity of water came away. I then introduced the tractor into the posterior puncture, but still failed to deliver. It was then agreed that I should introduce the finger of my left hand into the child's mouth, pulling by the tractor at the same time with my right, whilst Dr MacLagan should draw by the legs and body. The child then came away with a great gush of water and brains. The woman made her water within three hours, and is as well as in an ordinary case."

Dr Figg stated, that about fifteen years ago he had opened the body of a woman who had died during labour under the care of a medical practitioner who was since dead. He (*Dr Figg*) had been asked by the relatives to extract the child *per vias naturales*, as they had some superstitious feeling against burying the child in the maternal womb. Having made an ineffectual effort to extract it by dragging at the feet, he obtained permission to open the abdomen, when he found that the patient had died from rupture of the uterus, resulting from the strong efforts required to expel the head of the fœtus, which was enormously distended, and contained half a gallon or more of fluid.

Dr Thomas A. G. Balfour said, that on one occasion when he was himself an invalid, his friend *Dr Thomas Keith* had attended one of his patients during her labour, which was greatly prolonged, in consequence of the hydrocephalic condition of the infant. As in the majority of cases of this kind the patient was a primipara. The head presented, and labour was not terminated until the coverings gave way, and the cranial contents were discharged.

IV. FACE PRESENTATION.

Dr Thomas A. G. Balfour stated, that he had recently been in attendance on a woman in labour, where at first the head presented in the usual manner. Soon after he had made an examination, and satisfied himself as to the nature of the presentation and position, the membranes broke, and a gush of water took place; and on examining immediately afterwards, he found that the position of the head had become changed, and that now the face, instead of the vertex, was presenting. The case went on, and was terminated as an ordinary face case.

DEATH OF M. BRETTONEAU.

ONE of the most illustrious masters of contemporary medicine, Brettoneau, has passed away, at the age of 84 years. His funeral, unattended with pomp or official eulogiums, took place at Passy, to which he had retired; and a small number of devoted friends, among whom but a few belonged to the medical profession, performed the last sad offices. According to his own wish, his body is to be removed to Tours, his native place. The influence which Brettoneau exerted upon the progress of medicine is well known, although he was never a professor, and wrote but little. His reputation is chiefly founded upon his works on diphtheria and dothinerterite, and on the success of the pupils whom he trained, the two most distinguished of whom are Velpeau and Trousseau.

VARIETIES.

FACILITIES FOR DISSECTION IN SPAIN.

If Italy is advancing in the path of progress, Spain seems to be going in the opposite direction, so far, at least, as regards science. The Queen, on the recommendation of the Minister of the Interior, has signed a decree, ordaining that, in the Hospital of Santiago, a city where there is a university, no patient received into the establishment shall be placed in the clinical wards without his own consent if he is of age, or without that of his relatives if he is a minor. Moreover, the body of no individual who dies in the said hospital can be con-

veyed to the dissecting-room *unless he has previously given his consent*, which of course must have been granted during his life. Consequently, our Spanish brethren will be obliged to mingle with their consolations to the dying this soothing request: "My dear sir, in all probability you will die in the course of a few days; do you see any objection to our dissecting you a little after that sad event?" What will the patient say? It is not very difficult to conjecture!—*Gazette Hebdomadaire*.

MEDICAL ISOLATION IN SAN FRANCISCO.

How very differently are our medical men situated, in regard to intercourse with their brothers from abroad, in San Francisco and the cities of Europe, or even of the Atlantic coast of the United States. Here we scarcely ever see a stranger from foreign countries. In London or Paris, whatever is being done in the profession is at once submitted to the criticism of medical men of all parts of the civilized world. Here we plod along, doing whatever comes in our way, with none to either praise or censure. Our stimulus to effort here depends almost entirely upon whatever natural energies we may possess. We envy those, indeed, who are situated so that they are constantly spurred to exertion by the stimulating influence of immediate scrutiny of whatever they may do, whether in lecturing or operating. We, personally, are not, however, entirely destitute of the privilege of meeting non-professional faces. Medical gentlemen, from different parts of this coast, having learned our wishes in this respect, generally do us the favour of calling whenever they come to this city. But for anything more than this we have little to hope, except from the genius, energy, and talents of California's great Railroad King, Judge Dame, who has proven himself almost able to annihilate time in building a railroad, and may yet give us one to the Atlantic States, which would place us in the centre of the world. But for the hope, which has been too long deferred, of that road being built, we should never have been here. We can endure almost anything better than being isolated from the medical world.—*San Francisco Medical Press*.

MEDICAL JOURNALISM IN AMERICA.

Salutatory. Vivimus, We still live.—"A self-evident proposition," you may say, dear reader, "and requiring neither assertion nor proof." But we have thought it well to state it thus objectively, for two reasons: *First*, Because many of our contemporaries, yielding to the pressure of these sad, sad times, no longer perform that troublesome, and yet strangely fascinating function. From North, East, South, and West, exchanges whose friendly faces were wont to greet us each month, now cease to gladden us with the light of their countenances. Some have fallen, like the soldier, bravely fighting, and left scarce a word of farewell. Others have pronounced their benediction, decently covered their head, turned their face to the wall, and gently breathed their last; while others still, proclaim that they are not dead, only suspended, and lead us to hope to see them once again, when the stars shall be more propitious. Therefore it is that we assert our continued existence—not in a spirit of pride or self-gratulation, but rather of thankfulness, that our State and City have still so great a degree of prosperity vouchsafed to them, and that a kind Providence has thus far stayed the hand of war from our borders. *Secondly*, Because, not without reason, it has been surmised, in various quarters, that the unpleasant reverse was the case. The long but unavoidable delay in getting out our few last numbers, more especially that of December, the month which has seen so many decedences, has awakened the suspicion that we were among them.

The New Year!—With what portentous aspect does it—but stop! we had quite forgotten our manners! Allow us, dear reader, and more particularly dear *Subscriber*, to wish you the "Compliments of the Season!" We are glad that we checked ourselves in the mournful peroration on which we were about

launching. Science has no business with tears in its eyes; and besides, if we had worked ourselves up into a state of maudlin excitement on the "state of the country," we might have roused our sensibilities to such a degree, that we should have felt a delicacy in referring to the little matter of unpaid subscriptions, which we nevertheless feel to be our bounden duty. With the nation and the war, you and I, in our mutual relationship, have nothing to do.—*American Medical Monthly*, January 1862.

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NOTICE TO OUR SUBSCRIBERS.

IN consequence of the very great pressure of original matter upon our pages, we have been compelled to postpone the publication of several reviews, and of various matters of medical intelligence.—ED. EDIN. MED. JOURNAL.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Diphtheria and its Sequels: a Narrative.* By JAMES BEGBIE, M.D., F.R.S.E., Physician in Ordinary to the Queen in Scotland.

(Read before the Medico-Chirurgical Society, April 2, 1862.)

DIPHTHERIA, as it is now called, was prevalent in Edinburgh and its neighbourhood during the year 1826. It was fatal in a large proportion of cases; and by its alarming rapidity, and resistance to the means of treatment employed, as well as by its numbering amongst its victims some of the younger members of distinguished families, produced a great sensation.

It was at once regarded as a new disease: the sudden sinking of the vital powers under which so many succumbed, and the laryngeal complication which was equally terrible and scarcely less frequent, had hitherto been unknown in the history of sore-throat.¹

Dr Hamilton, jun., then Professor of Midwifery in the University, in his "Hints for the Treatment of the Principal Diseases of Infancy and Childhood," and, subsequently, in the second volume of the Edinburgh Journal of Medical Science, described the disease as it had fallen under his notice, as "a peculiar modification of sore-throat which occasionally affects children." Dr Abercrombie also (who had seen the disease during the year of its prevalence), in his work on the Diseases of the Stomach and Intestinal Canal published in 1828, refers to it as a modification of disease of the mucous membrane of the mouth and throat, and recognises it as the affection which had been described by Bretonneau and other French writers, and whose history had been communicated for the first time in memoirs read to the Academy of Medicine of Paris in 1821.

I remember well the first occasion of this form of disease coming under my notice. It was in the summer of 1826. The subject was a child of six years of age, the youngest of a family of five, residing with their parents in a remarkably healthy locality, situated on a rising ground, about a mile and a half from the confines of the city. The house they occupied was large and airy, surrounded by pasture

¹ Recent research has shown that this is incorrect. The disease was, in all probability, known to the ancients, and had been observed in all times.

lands, and in every way favoured as to the means of securing freedom from sickness. Diphtherite, however, had entered, but in what way it was not discovered. The patient, a little girl, previously enjoying good health, had been confined to bed for a few days before my first visit. She had a febrile attack, accompanied with slight sore-throat. I found her pallid and sickly. Her skin was warm, but not hot; her pulse was frequent and feeble; her tongue loaded; her mouth and throat red and swollen, and on the centre of the left tonsil, there was a pale, ash-coloured patch,—a thin film or pellicle, about the size and shape of a horse-bean. It had well defined edges all round, and no appearance of ulceration could be detected. The external glands were not affected, and only slight difficulty of swallowing was experienced. I pronounced, too readily, a favourable prognosis, and prescribed the usual febrifuge remedies, together with the free use of acid gargles for the throat, and milk and farinaceous food as diet. No marked change was perceptible in the symptoms during the two following days, saving that the little patient appeared daily more exhausted. The pellicle on the tonsil did not extend its boundaries, and the general redness and tumefaction of the fauces did not increase. No fœtor of the breath, no huskiness of the voice attracted notice. No vital organ appeared to participate in the general disorder, till on the morning of the fourth day—the seventh from the invasion of the disease—the heart was found to labour. The pulse became more and more unsteady, the breathing slow, the extremities cold, the countenance livid; and in spite of wine, ammonia, and other stimulants, the little patient, who, during her illness, had scarcely acknowledged suffering of any kind, passed unconsciously into the sleep of death,—death, the result of the general disease of the system, not of any complication,—exhaustion of the vital powers, the work of some hidden poison exerting its influence on the blood or on the nerves.

Some weeks passed before I was again summoned to witness the progress of diphtherite. It was under altered features, and in somewhat different circumstances. The subject was a girl of the age of four years, residing with her parents in a humble dwelling situated in one of the dirty and over-crowded streets now swept away through the operations of the railway engineer. In a low dark room, in a confined and airless bed, in this abode of poverty lying at the base of the Calton Hill, there lay this child who had sickened some days before, and, beside her, a sister a year older, who had just succumbed to a similar fate. Both these children were plump and well nourished, and, by those around them, regarded as very healthy. The younger, who first claimed my attention, was restless and hot; her pulse was frequent. She complained of sore-throat, of sickness, and thirst. Her tongue was coated with a whitish fur; the uvula, palate, and tonsils were swollen, and discoloured by a dark rosy congestion; and on both sides, and extending into the fauces, there was a large patch of the ash-coloured

pellicle, obscured by a copious secretion of mucus issuing from the posterior nares. Deglutition was painful and difficult, and the voice low and whispering. The larynx became more involved; and in the course of the following day, all the symptoms which characterize ordinary croup were fairly developed. It was a sthenic case, and admitted of active treatment. Leeches were accordingly applied to the neck, and followed by warm poultices. Emetics were administered from time to time, and calomel, the great remedy of the day, prescribed in oft-repeated doses. Caustic was also applied to the tonsils and fauces, but all unavailingly. No effort of vomiting, no frequency of cough dislodged the false membrane, whose extrication we then regarded as symptomatic of the arrest of death. The voice became more and more stridulous, the breathing more and more rapid and impeded. The countenance assumed a livid hue, the pulse a feebler character; and death by asphyxia closed the scene on the third day of my attendance.

Before that day arrived, the elder sister and bed-fellow of this poor child had become an object of much anxiety. The disease, as manifested in the younger, rapidly developed itself in the elder sister, in all its virulence, save in the laryngeal complication. The voice was not affected. The fever rose high; vomiting was urgent; the pulse was rapid; the pain and difficulty of swallowing extreme. The leathery pellicle occupied the tonsils, the uvula, palate, and posterior wall of the pharynx; and, dreading its extension from the fauces to the glottis, the child was rapidly brought under the influence of calomel. I cannot affirm that to this mode of treatment can be ascribed the exemption from croup which she experienced; but I cannot but fear that the mercurial played a part—a mischievous part—in the diarrhoea which supervened, and under which, with rapid sinking of the strength, such as is too often seen in diphtheria, with no adequate cause to account for it, the little patient breathed her last.

Permission was given to examine both bodies after death. In the former case, the mucous membrane of the pharynx was red and thickened, and covered with a thin layer of soft membraniform lymph. In the larynx and trachea this had acquired a greater consistence, and could be peeled off from the subjacent mucous surface, leaving it red and raw-like. The upper part of the bronchial mucous membrane was inflamed, and covered here and there with thin lymph. The extreme bronchial tubes were loaded with mucus, and the substance of the lung partially solidified from recent pneumonia. In the latter case, the only appearances discovered were those of inflammation and ulceration of the mucous membrane of the smaller intestines, particularly the ileum; but no sign of pellicular exudation was any where discoverable, save on the mucous surface of the mouth and pharynx.

A quarter of a century and upwards passed away, and I saw no other case of the disease which had then proved so formidable and

so fatal. During the prevalence of protracted epidemics of scarlatina, and with many opportunities of watching the progress of sore-throat in various forms in the interval, I saw no instance of the pure pellicular affection. I could speak of diphtherite only as I had witnessed its features in 1826. About four years ago, however, the disease became epidemic in the south of England, and has since visited in that form various other parts both of England and Scotland. It has not assumed the epidemic character in Edinburgh or its neighbourhood. Many of the practitioners here are still unacquainted with it from personal observation. Some remember it only as it exhibited itself in 1826.

I renewed my acquaintance with the disease in the spring of 1858, when I was requested by Dr Paterson to visit along with him, in North Leith, a child who had recently arrived there from London. I learned that another child in the same family had lately been affected with diphtheria in the same house, and that the disease had terminated fatally through the laryngeal complication. The child, then ill, presented the well-marked features of the pellicular disease, such as I had previously observed it. It was treated by the free exhibition of wine and other stimulants, and by chlorine water as a wash for the mouth and throat, as well as for internal use, and made a good recovery, being considered safe about the eighth day of the attack. One child in the family, a boy of two years of age, remained at this time unaffected, and circumstances rendered it desirable that he should be sent to friends in the north of England. On his arrival there, symptoms which had raised some suspicion developed themselves in the form of severe diphtheria. He struggled through it, and made a slow recovery. Both these children were affected during their convalescence with disordered vision of an amaurotic character, which continued for nearly three months. They perfectly recovered. Some time afterwards I was asked by Dr Finlay to see a boy of seven years of age, who had recently arrived from Fife on a visit to friends in Newhaven. In this case the distinctive character of the disease was well marked, and the boy sank rapidly on the fifth or sixth day, partly through the virulence of the general disease, but not before the larynx had shown signs that the inflammatory exudation had spread, and involved its lining membrane. In the spring of 1859 I was called to visit, with Dr Wylie of Errol, the daughter of a gentleman residing in that district. She was suffering from the disease in an aggravated form. The larynx had become affected, and all the distressing symptoms of croup were endured. She quickly sank, asphyxiated. Dr Wylie informed me that for some time the disease had been very prevalent in the district in which he resided, and that scarlatina of a malignant type had at the same time been very fatal. I was struck by the remark of an aged relative of the young lady whom I was called to see, to the effect that she had never seen such a sore-throat for nearly thirty years, when she had witnessed

the same "white leather spot" with all its terrors in the case of an aunt of the patient then expiring.

In the autumn of that year the disease was more prevalent in the neighbourhood of Edinburgh. I saw, with Dr Graham Weir, on the 24th September, the daughter of a gentleman residing in the northern part of the town, a well-marked case of the disease. The little girl, aged six, had been seized on the evening of the 21st with a distinct rigor, followed soon after by severe and urgent vomiting. The sickness continued during the 22d, accompanied by drowsiness, heat of skin, thirst, and sore-throat. She became restless on the following day, and on examining the mouth and throat, the ash-coloured pellicle was found on the tonsils and on the arch of the palate. In the course of the 24th she had become cold, with sinking pulse and strength. She rallied, and for some hours the skin was covered with a scarlet rash, which quickly passed away. The voice now became husky and croupy. Under a liberal use of wine, the internal administration of the chlorine in water, and its inhalation by means of impregnating the air of her chamber with it in the form of gas, she improved. The disease ran its course without further complication, and the child recovered. On the day on which I took my leave I was asked to visit, with Dr Renton of Dalkeith, a child in that town, who had sickened immediately after the death of a brother from sore-throat. Vomiting was an early and urgent symptom, accompanied by drowsiness and febrile reaction. On examining the mouth and throat, the tonsils, uvula, and fauces were found red and inflamed, and patches of considerable size of thick, ash-coloured exudation were distributed over them. The voice was husky and weak, and deglutition painful and difficult. No remedy availed, and the child rapidly sank, apparently from the specific poison of the disease. In the first week of November I saw with Dr Peddie, in the south side of the city, a little girl who had sickened soon after the death of a sister from diphtheria. The larynx was not affected in either case, but the general disease was severe, and the local affection in the mouth and pharynx well marked. The second case recovered.

I have now seen twenty cases of diphtheria, of which eleven have proved fatal. This large proportion of deaths, however, must not be considered as indicating the average mortality from the disease. The number of the whole is too small from which to draw any accurate conclusion; while it must be kept in mind that my attendance in almost all the cases was requested only on account of their more than usual severity. Of these eleven deaths, five occurred in children under 5 years of age, three between 5 and 10, one between 10 and 15, and two in adults, aged 49 and 53. Four of the number died from the laryngeal complication, the remainder from the gravity of the general disease. Of the four who perished by the former, three were under five years of age, and one a little above it. Of

the two adults, one died rapidly, the other more gradually, of the general disease.

Of the nine who recovered, six were known to have suffered from the diphtherial palsy in some form or other, the remaining three were not known to have manifested any such consequences.

In ten of the twenty the disease was traced distinctly to infection from a blood-relative or friend residing in the same house. In ten the origin was not ascertained.

The cases I have recently visited differ in no essential character from those I observed in 1826, and it would be useless to relate them in detail, even had my means of doing so been more accurate and extensive than they necessarily have been. I shall content myself by a notice of one or two family groups, in order to bring out the chief features of the disease.

Miss A., aged 15, the eldest of a family of ten children, residing in an airy situation in the vicinity of Leith, had been observed to be languid and listless for some days, when she began to complain of sore-throat. On the 1st of March 1861 she was seen by Dr Paterson. On examination, he found the fauces generally red and swollen, with patches of a whitish-yellow colour of considerable size over the tonsils, uvula, and back of the pharynx. This condition of the throat was accompanied by a soft, feeble, rapid pulse, vomiting, and great depression of the vital powers. I saw her with Dr Paterson on the 4th. She was much prostrated. The exudation had extended, deglutition was painful and difficult, and the voice low and whispering. There was also much somnolence. Under the free use of wine, and the regular administration of the muriated tincture of iron, together with the frequent employment of Condry's fluid to the mouth and throat, an improvement took place, and continued from day to day. The larynx was not farther involved, and the general disease ran its course to convalescence. A brother, aged 10, had sickened at an early period of his sister's illness, and on the first day of my attendance presented the well-marked features of the disease, but in a mild form. The diphtheritic pellicle was confined to the tonsils, and the general febrile disturbance was slight. His convalescence was coincident with that of his sister. His seizure had been four or five days subsequent to hers. At an early stage of their illness, Dr Paterson had recommended the removal of the younger members of the family from home. They had been strictly kept apart from the sick from the commencement of the illness, and were now sent in two parties,—one of two and the other of six,—the former to friends in the neighbourhood, the latter to Musselburgh. They were considered to have remained unaffected by the disease. The larger party, after a residence of fourteen days at Musselburgh, were permitted to visit some relatives in the neighbourhood of Stirling. On the sixth day after their arrival, the youngest child of this family sickened of the disease, and in succession two others, the second fourteen days after the first, and the third fourteen days

after the second. The first died about the fifth week of the disease, having recovered from the immediate effects of his illness, but sank under what was considered hooping-cough and paralysis of the lower limbs. These paralytic symptoms were preceded by the nasal voice and mumbling articulation which characterize the palsy of the velum palati. The second, a boy of fifteen, appeared to make a good recovery, but was afterwards affected by symptoms which I shall immediately describe. The third, a young lady of twenty, whose illness was slight, made a perfect recovery, and had no nervous or other sequelæ. Meantime their relative, Miss A., whose case I first noted, during her convalescence was affected with imperfect vision, which gradually increased, assuming the character of amaurosis, and complicated with depraved sensation and diminished power of the right hand, and with want of command of the lower limbs, so as to give the character of paralysis to the impaired motor power, especially below the knee. In three months she had perfectly recovered. We return to the second case of the family near Stirling, to whose house Miss A.'s six brothers and sisters, who were believed to have escaped the disease, had gone during her illness. On the 16th of July I was called to Musselburgh to see a lad who had been brought there for the benefit of sea-bathing after a tedious illness, and discovered in him the subject of that case. More than three months had passed since he had recovered from the attack of diphtheria. During his convalescence he had been affected with loss of power over the lower limbs, gradually increasing, and now amounting to almost complete paraplegia. He was unable to leave his seat or walk across the room without assistance, and his best efforts resulted in his dragging his limbs in a shuffling, jactitating manner. There was also partial loss of power and sensation in the upper extremities. Yet he looked well,—perhaps a little anemic,—he felt well, he ate well, and he made no complaint but of the loss of power of his limbs. These symptoms had been preceded by snuffling voice and impaired vision. He perfectly recovered under the use of iron and of *nux vomica*. And here I must mention a remarkable coincidence in connexion with this family group, if, indeed, it be not a link—an important link—in the chain of events we are now recording. On the 25th of March 1861, just three weeks after I had been called to Miss A., I was requested by Dr Coldstream to visit with him a little girl, aged four years, residing with a family in the immediate vicinity of the residence of Miss A., and maintaining with her family a friendly intercourse. This child was affected with some remarkable paralytic symptoms. She had lost the use of her lower limbs, was unable to support herself or to make one step in advance. She had also lost in a great measure the command of her arms, was unable to use her hands or lift them to her head. On being raised from the sofa on which she always reclined, and on which she appeared motionless, her head fell to one side, and always required the support of the

person in whose arms she was placed. She had previously, and as an early symptom, been affected with difficulty of articulation. She made a snuffling noise, and mumbled in her talk. Deglutition was difficult, and in attempting to swallow fluids especially, they were partially lost, escaping from the angles of the mouth. Her intellect was unaffected, and she was otherwise in good health. Under the persistent use of *nux vomica* she made a gradual recovery, and is now quite well. Now this child, I have learned, had sickened a short time before Miss A. was seized with diphtheria. Her illness commenced with vomiting and gastric irritation. The tongue was much furred. She complained of sore-throat and difficulty of swallowing, referable to the gullet, but no pellicular exudation was discovered within the mouth, and the disease ran its course under the name of gastric fever. It was during her convalescence from this illness, and about a month from the period of her seizure, that I found her with the symptoms first described. These paralytic or pseudo-paralytic symptoms were not at the time suspected of being in any way connected with the febrile attack which preceded them: they were considered independent of it, and that illness was never supposed to be of the nature of diphtheria. Nevertheless, I incline to the belief that such was its essence, and such the connexion between it and those disordered functions of the nervous system just described. In this opinion I am joined by Dr Coldstream.

In the development and progress of such a disease as diphtheria, a general or constitutional disorder, we are not to expect in every case a manifestation of its anatomical character. We every now and then meet with cases of scarlatina without eruption, and of rheumatic fever without the affection of the joints. In the one case, we are taught for the first time the true nature of the malady by the occurrence, by and by, of albuminous urine and cedematous feet and eyelids; and in the other, we are left in no doubt as to its real character, by the peril in which our patient is involved when the heart participates in the general disorder. So may we expect to find during an epidemic of diphtheria, cases of the true disease, though no wash-leather-like spot appears upon the fauces, and only form a late diagnosis when the paralytic symptoms have removed all doubt.

Diphtheria is a blood-disorder which manifests a predilection for the mucous membrane of the pharynx, on which to display its anatomical character; but that character may be demonstrated on other parts and other textures of the body, still constituting a true diphtheria. The exudation of lymph may be trifling, and yet the general disease may be severe. The pellicle may exist on some part of the mucous membrane not visible to the eye, and the patient, all the while, be the victim of an unseen and dangerous diphtheria.

Mr Spence has recently communicated to me an interesting case, which bears on this subject. Being called upon by Dr Menzies to operate on a child affected with croup, tracheotomy was performed under the impression that the disease was primary, and of a local

nature, examination having failed to discover any affection of the fauces. Some days after the operation, a second examination revealed the true nature of the disease. The posterior wall of the pharynx was then found to be the seat of diphtheritic exudation, which, in all probability, had spread from the larynx to the membranes of the pharynx, reversing the usual order, and proclaiming the constitutional origin of the disease. The child survived till the sixth day after the operation, and died, apparently, of the general disease.

We may hazard the conjecture that, in the case of the child supposed to labour under gastric fever, the gullet and stomach were the parts on which the exudative inflammation was spread; a conjecture which gains strength from the fact, that these parts have been found in other cases, after death, to be the seat of this peculiar deposit of lymph.

One link in the chain of sequences in this family history is still wanting: the one, namely, which connects the infection of the family in Stirlingshire by means of the children from Musselburgh. At first sight, the contagion was supposed to have been conveyed by clothes, carried directly from the house in the vicinity of Leith, where the disease first appeared, to the residence of the family in Stirlingshire. There is no ground, however, for believing that the contagion of diphtheria can be so transmitted, and we must seek another clue. It has been already stated that the six children left Musselburgh, and arrived at their relative's house, supposed to be in good health. One of their number, however, it now appears, was observed before leaving his father's house to be dull and dispirited. He was ailing while in Musselburgh, but the character of his illness has not been noted or remembered correctly. This, however, is known of him, that before he left that place, the early indications of disordered innervation betrayed themselves in feeble, unsteady walking, that they increased while in Stirlingshire, and on his return home, presented the form of paraplegia, now known as the sequel of diphtheria. He remained under the care of Dr Paterson for a month, and perfectly recovered.

I take another family history. Miss D., aged 14, living in one of the healthiest parts of Edinburgh, was seen by Dr Warburton Begbie for the first time on the 21st of January, presenting the well-marked features of diphtheria, in a copious exudation of lymph over the tonsils and posterior wall of the pharynx, accompanied with considerable constitutional disturbance. The disease pursued its course favourably, and on the eighth day there occurred the nearly complete separation of the pellicle from the left tonsil and palate, and the throat was left very tender. A marked improvement in deglutition followed. The voice, however, continued nasal, and fluids were occasionally rejected through the nostrils. On the 10th of February, the twentieth day from the first occurrence of sore-throat, the difficulty of swallowing, which had considerably abated, re-

turned, and great care was required, in order to guard against the rejection of food, especially of fluids, by the nose. The velum palati was now free of lymph, but hung loose and immobile. Numbness, prinkling, sleeping of the toes, feet, and legs came on, and to these succeeded difficulty of moving the lower limbs. In a day or two there followed indistinct vision, and inability to read even large-type print. At this stage, she was placed under quinine and nuxvomica, and, by and by, was sent into the country. She soon improved in all respects, with the exception of sight, which still continued weak and imperfect. On lifting, perchance, a pair of spectacles suited for aged sight, and placing them before her eyes, she was surprised to find vision considerably aided. She is now (March 15) free from all ailment, and the only inconvenience she experiences is that arising from impaired vision, which is also gradually abating. No albumen was at any time discovered in the urine.

On the third day of Miss D.'s illness, she was joined by Miss F., a lady of 53 years of age, who occupied towards her the responsible position of guardian, and discharged the duties of her office with remarkable fidelity. She was much by the bedside of her ward, and underwent great fatigue. On the sixth day of watching, she complained of slight sore-throat. On examination, the fauces was found red and swollen, and on the left tonsil there appeared a small but distinct patch of exudation. There was scarcely any febrile disturbance, and it was with difficulty Miss F. was persuaded to retire to her bedroom. On the following day the pellicular exudation had greatly extended. The tongue was furred, and the odour of the breath very offensive, while the constitutional disturbance had become considerable. The voice assumed the nasal sound, deglutition became more difficult, and pain stretching to the ears gave much discomfort. Cough from time to time was observed, but no physical sign on examination of the chest. For some days there was little change in the condition of the throat; but a considerable discharge of dirty shred matter was brought off by the operation of gargling. The voice became whispering, and the cough sharp and somewhat stridulous. On the eighth day of her illness the countenance became more anxious, and the face somewhat turgid and swollen, and Miss F. complained of oppression over the chest, but she expressed herself hopefully regarding the issue of her illness. No indication of pulmonary affection, on exploring the chest, was discovered. The throat had at this time assumed a cleaner and more healthy appearance, the constitutional symptoms were less grave in character, and hopes were entertained that she was progressing towards recovery. On the following day, however, the ninth of her illness, without any aggravation of the local symptoms, there was observed, from an early hour in the morning, a decided failure of the vital powers. She sank into a semi-comatose state, and died soon after mid-day. At the commencement of the

illness the throat was freely touched with nitrate of silver; and Condyl's fluid, as a wash, was used throughout. Poultices were freely employed, particularly in the early stage of the disease. The strength was supported by wine and beef-tea in liberal measure, and the tincture of the muriate of iron persistently administered every third hour. These two patients were members of a family ten in number, and the only two who had not passed through scarlatina.

These illustrations will be found to contain some of the chief points in the history of diphtheria. The cases first recorded bearing on the symptoms and appearances which characterize its febrile stages, and the two family histories touching the manner of its transmission, and the disorders of the nervous system which so frequently supervene during convalescence. In regard to the latter phenomena, however, it must be noted that they have been observed to present themselves in characters much more formidable than any I have recorded. The heart itself has been found to suffer what may be called a paralytic stroke, and death has followed with awful rapidity. I have not witnessed such a termination; nor have I witnessed the slower, but not less sure, dissolution preceded by failure of the heart's action; the great organ of life giving out its solemn pulsations at the unwonted rate of 24 per minute. The eyesight suffers in a variety of ways, from the mere indistinctness to the almost total loss of vision,—from a paralysis of the moving and accommodating muscles, to that of loss of power in the retina itself. Squinting and double vision sometimes occur, and give to the case, especially when combined with other cerebral symptoms, a character of suspicious gravity. I saw an example of the kind with Dr Traill of Arbroath, in a young gentleman in that part of the country, recently returned from school in the south of England, where he had suffered a severe attack of diphtheria. His convalescence was progressing at home, when he began to manifest some unsteadiness in walking, which, by and by, amounted to loss of power over the limbs. He suffered some febrile attack, complained of headache and giddiness, and was confined to bed. His sight became confused, and double vision and squinting came on, and were persistent for several days. The pupils were irregular and dilated, and at times there was intolerance of light. The disordered vision was somewhat peculiar: at one time he described a person as having two heads, one above the other; again, as side by side; and sometimes as having only one half of a head. At times there was difficulty in swallowing, apparently from loss of power in the pharyngeal muscles and œsophagus; and, on attempting to stand or walk, the loss of power of limbs was greater on the left side. The previous attack of diphtheria enabled us to give a more favourable prognosis than we otherwise could have done. The symptoms gradually subsided, and perfect recovery took place. No trace of albumen was discovered on examination of the urine.

Two views have been propounded in explanation of these morbid phenomena presented by the nervous system during the convalescence from diphtheria:—one, namely, that they are of reflex origin; the other, that they are essentially toxemic. The variety of shades, and the changing aspects of these cases of disordered innervation, as well as their amenability to treatment, and frequent and speedy termination in health (though in some instances death has unexpectedly occurred), forbid the notion that they are connected with any serious lesion of the nervous centres; while their analogy to the nervous disorders occasionally seen after small-pox, typhus fever, syphilis, gout, and rheumatism, point in a marked manner to their dependance on a specific poison. We cannot fail to acknowledge the fever-poison of diphtheria,—to recognise its contagion,—to observe its period of incubation—its general and local manifestations—the efforts of nature to dislodge it from the system—and its successful or unsuccessful elimination. Neither can we lose sight of the serious blood changes which take place in the course of the disease, as manifested by the albuminuria which frequently attends it from the beginning, disappearing during convalescence, and reappearing in connexion with the paralytic symptoms.

It may be asked, if there is a diphtherial poison in operation, how is it that the nervous system is so late in affording evidence of its existence? It is during convalescence, often after recovery, from diphtheria that these paralytic symptoms manifest themselves. The poisonous excrement has surely by this time been thrown out by the great emunctories. I point to the kindred disease of scarlatina and its secondary disorders in order to show that it is precisely at the same stage, namely, from the twentieth day and onwards, that the specific poison of that disease still demonstrates itself in bloody and albuminous urine, and in dropsy. The one poison still lingering in the system, has an affinity in one direction, and the other in an opposite. They each appear to exert their influence at the same period, but on different tissues,—the one selecting the capillary, the other the nervous structure. They have each, in their own manner, manifested their character in the production of a special disease; and before their complete elimination, and probably after undergoing changes which we shall one day be able to demonstrate, they have shown that they are still capable of influencing the functions and structure of the body in a manner scarcely less fatal than when first implanted.¹

Diphtheria, like scarlatina, is sometimes rapidly fatal from the severity of the general disease. Dr Jenner has recorded a case in which it proved fatal in a few hours. The most rapid case which has come under my notice was that of A. S., a retired butler, aged 49, whom I saw with Dr Thomson of Teviot Row, on the evening

¹ This toxæmic, anæmic, or spanæmic condition, resulting from special blood-disease, operates, I apprehend, on the nervous fibre, by means of impaired nutrition.

of the 5th of January last. He was in the enjoyment of perfect health, when, on the morning of the 3d, he was seized with rigor, followed by vomiting and febrile symptoms, so slight, however, as not to prevent him keeping an appointment he had made for the evening. He then passed a restless night, complained of sore-throat and urgent thirst. He was unable to leave his bed on the following morning, and throughout the day felt increasingly worse. Pain and difficulty of swallowing succeeded, and the voice became feeble and whispering. It was not till towards evening that he requested the attendance of Dr Thomson, who, recognising the gravity of the case, begged me to be conjoined with him. At 9 P.M., when I first saw him, he was sinking; his pulse was rapid and feeble; his voice husky; his countenance pallid and anxious; his extremities cold; his breathing was somewhat laborious, and performed with a wheezing sound, heard all over his chest; his intellect was unclouded. On examining the throat, the surface of the tonsils, arch of the palate, uvula, and pharynx, as far as the eye could reach, were found covered with a thin ash-coloured pellicle, which, here and there, also appeared in patches inside the cheeks. The exhibition of large and oft-repeated doses of stimulants failed to produce the smallest effect on the circulation, which rapidly declined, and he died a little before midnight.

The most protracted case I have seen before terminating fatally was that of a young lady, aged 14. She was seen by Dr Peddie on the 7th January last, having sickened twelve days before. When first seen by Dr Peddie the entire fauces were covered with a thick yellow pellicle; the pulse was rapid and weak; the stomach was irritable, and frequent vomiting took place,—the ejecta being of a watery character and very copious. There was little or no suffering, and no complaint but of exhaustion. She became weaker from day to day, in spite of every effort to sustain her strength, and died on the 14th, the twentieth day of her illness.

Death from the laryngeal affection is most common in children, and is usually witnessed within the first week of the disease. Death threatened from the general disease is often rapidly consummated, even when the patient appears progressing towards convalescence. Of this we have an instance in the case of Miss F.

The opinion is entertained by some that the general disease may be arrested by topical applications to the throat, hence the assiduous employment of caustics and disinfectants. Trousseau is decided on this point. He teaches that by interposing energetically to combat the first manifestation in the throat, we may sometimes arrest the progress, and prevent the ulterior manifestation of the general disease. I agree with Dr Jenner, that all we are to expect from the use of such active means is the arrest of the exudative process before it reaches the larynx, and the prevention of the absorption of fetid matters. I have seen no satisfactory case of the arrestment of the exudation by means of nitrate of silver or mineral acids. I

have sometimes satisfied myself that good has been obtained from the employment of chlorine in vapour, and in solution as a drink and wash for the mouth and throat. The same may be said of Condyl's fluid, which has the advantage of being more palatable to children.

My experience leads me in the treatment of the general disease to place most reliance on remedies calculated to sustain the system during the currency of a disease of asthenic character. The free use of wine and brandy has been clearly indicated in all the cases I have seen, even in an early stage of the disease; and recognising the value of iron, in the form of the muriated tincture, in erysipelas, and in some forms of scarlatina, I have satisfied myself that its persistent use, during what may be called the poisoning stage of diphtheria, has had a salutary influence. As a remedy also in those peculiar paralytic affections, which so frequently supervene during the convalescence from the disease, or even after recovery from it has been established, it is equally valuable. Hitherto I have seen no case of diphtherial paralysis which has not completely recovered under the administration of this preparation of iron, either singly or in combination with *nux vomica*.

In regard to the aid which surgery affords in those terrible cases of threatened suffocation, where the larynx has become involved in the diphtheritic exudation, I am not prepared to speak with confidence. I have seen too little of the operation of tracheotomy in such circumstances to enable me to form a decided opinion of its value. The opening of the windpipe has, no doubt, in some cases, rescued the victims of diphtheria from the immediate grasp of death, prolonged existence, and even saved life; but it has often failed to secure more than a temporary respite from the threatened doom; while in some cases, from the irritation produced by the mechanical means employed for supporting respiration, the facilities given to the passage of poisonous matters into the bronchi, and the difficulties imposed at the same time to the free expectoration of morbid secretions from the air-tubes, sources of distress and danger have arisen which render it doubtful how far the operation has proved a blessing. If, however, it has saved one life—and there is no doubt that it has—it is the duty of the practitioner to offer the chance of its success in every case where not debarred from doing so by utter hopelessness. The only object for which it is to be undertaken is to arrest threatened suffocation, and so afford time to the general disease to run its course in safety, if happily it had been the design and effort of nature so to conduct it, when a new, but not unlooked-for element in the progress of the disorder had unhappily intervened to embarrass and counteract her.

A fine chubby boy, scarcely two years of age, had been from the previous day under the care of Dr William Zeigler for a smart attack of diphtheria of some days' standing, when, on Sunday the 12th of January last, I was requested to see him. The exudative

inflammation, previously confined to the tonsils, uvula, palate, and posterior wall of the pharynx, had now extended to the larynx, and the child suffered all the agonies of croup. Before evening, asphyxia had nearly done its work, when it was arrested by the timely aid of Mr Spence. Tracheotomy lengthened out the life of the little sufferer, and placed him in comparative ease. He breathed; he slept; he took nourishment. He passed a tranquil night; and on the morrow we found him cheerful and happy, surrounded by his toys, in which he took a full interest, and little disturbed by the simple mechanism which science had interposed between him and death. The respite, alas! was very short. As the day advanced he was seized with vomiting; he became restless and oppressed; his pulse rose in frequency and fell in strength; his breathing became hurried; the obstructed air-cells obtained no adequate relief; and, before the evening closed, he expired, exactly twenty-four hours after the operation. It was a tranquil death compared to that with which he was threatened; and in justice to the operation of tracheotomy, and to those who advocate its performance, it may be allowed that, if it secured nothing more than relief from the agonies of slow suffocation, by substituting a less painful and distressing mode of dying, it is surely entitled to our grateful consideration.

The histories now recorded tend to confirm the views generally entertained in regard to the nature of diphtheria, and go to establish—

1st, That it is a constitutional disorder having the character of fever, running a definite course, and bearing a closer affinity to scarlatina and typhoid fever than to any other specific disease.

2d, That its local manifestation is chiefly observed on the mucous membrane of the mouth and throat; the tonsils, uvula, and palate with the pharynx being first affected; but that it has a tendency to spread to the adjoining passages, and is particularly prone to invade the larynx.

3d, That this local disease is of the nature of inflammation of asthenic character, with exudation of lymph in the form of pellicle.

4th, That the disease is contagious, and that youth and consanguinity powerfully predispose to it.

5th, That it is fatal from the severity of the general disorder, or from the exudative inflammation invading the larynx, and causing suffocation; or that death may result from the nervous disorder supervening in the form of paralysis.

And, lastly, that as we have no specific remedy for diphtheria, the disease and its sequels must be treated on the general principles which regulate our practice in fever, and in inflammation, and in nervous disorders of asthenic character.

ARTICLE II.—*Notice of some of the Cases treated in the Clinical Surgical Wards of the Royal Infirmary of Edinburgh, during March 1862.* By THOMAS ANNANDALE, M.R.C.S. (Eng.).

Œsophagotomy.

CASE 29.—W. H., æt. 21, admitted 22d February 1862. The patient was in these Wards last November, having accidentally swallowed a copper coin, whilst throwing it up in the air and catching it in his mouth. He remained in the hospital for three weeks, but as the symptoms of obstruction in the gullet, from which he had suffered on his admission, gradually disappeared, it was supposed that the coin had passed down into the stomach, and he was therefore advised to return to the country. There he had remained for some time, enjoying perfect health; but feeling that there was still something in his throat, he again applied to Mr Syme, who detected the foreign body by passing down the œsophagus an elastic bougie. The patient was recommended to re-enter the hospital, in order that an operation might be performed for its extraction.

25th.—The patient having been placed fully under the influence of chloroform, Mr Syme made an incision on the left side of the neck, about three inches in length, between the sterno-mastoid and sternothyroid muscles, dissected through the deeper tissues till the vertebræ were reached in the space between the trachea and carotid artery, then introduced his finger through the wound, but could not detect the foreign body; he therefore passed into the gullet by the mouth an ivory probang, and having cut into the canal upon it, he passed his finger down the œsophagus, felt the coin lying opposite the upper part of the sternum, and with a pair of forceps easily extracted it. The circumference of the coin removed, which was a Swedish one, was fully equal to that of an old penny.

For some days after the operation the patient was fed through an elastic catheter introduced by the mouth, and passed beyond the wound in the œsophagus. In a week he could swallow without any of the food returning by the wound, and at the end of a fortnight he was quite convalescent.

Remarks.—This case is quite unique as regards the position of the foreign body, the duration of its lodgement, and the operation required for its removal. That a copper coin could remain in the gullet for three months without giving rise to any irritation, is a fact which would scarcely have been credited. Œsophagotomy has been performed for the extraction of portions of bone, and other substances which have been lodged in the lower part of the pharynx or commencement of the œsophagus; but, so far as I can learn, this is the first time the operation has been successfully performed for the removal of a foreign body, which was situated so low down as the sternum. Last session, Mr Syme operated with perfect success on a woman, who had swallowed a piece of bone. In this case

the bone had perforated the gullet, causing a deep-seated abscess in the neck, which acted as a guide to the situation of the foreign body; but in the case of the coin, it was impossible to ascertain its exact position until the gullet was opened.

Stricture of the Urethra, with a large Calculus in its Prostatic Portion.

CASE 30.—D. F., æt. 30, admitted 4th March 1862. Six years ago, the patient received a kick in the perinæum while shoeing a horse. He suffered great pain in this situation for several days, and then began to have difficulty in passing his water. One year after, a fistulous opening formed on the right side of the perinæum, and through this opening part of his urine always passed until one year ago, when two other fistulae formed on the left side of the perinæum. The first opening now closed, but the water came through the other two fistulae, and has continued to do so until his admission here. During all this time the patient has suffered excessively, having had great pain and difficulty in making his water, with occasional attacks of complete retention. On examination, there were two fistulous openings in the perinæum, through which the greater portion of his water passed. There was a very tight stricture of the urethra at the usual situation, only admitting a No. 1 bougie, and Mr Syme detected a stone in the prostatic portion of the urethra.

6th.—Mr Syme having passed his No. 1 grooved staff through the stricture, divided it; he then carried the incision backwards to the prostate till the calculus was reached, and having seized it with forceps, removed it, but not without some difficulty, owing to the size of the stone, and the resistance of the tissues of the perinæum. The stone was the size of a pigeon's egg, and of an irregular ovoid shape. A short catheter was introduced by the wound, and fastened in.

10th.—The catheter was removed to-day: the patient is progressing most favourably.

10th April.—The patient is now sitting up every day; some of his urine still comes by the wound, which is slowly contracting. His health is much improved.

The following case I lately saw in Mr Syme's private practice.

CASE 31.—A gentleman, æt. 30, came under Mr Syme's care on the 2d March 1862. He had suffered great pain and difficulty in making water for many years, but the presence of a stone in the urethra had never been suspected. On examination, Mr Syme detected a calculus in the prostatic part of the canal.

4th.—Mr Syme having introduced a grooved staff into the bladder, made an incision in the centre of the perinæum, opened the membranous portion of the urethra, and extracted a stone from the prostatic part of the canal. The calculus was peculiar, the body of the stone had the size and shape of a small almond, but at one end it was surmounted by a rounded head the size of a pea; between these two portions there was a distinct constriction or neck. A

short catheter was introduced through the wound and tied in. The catheter was removed on the third day, the patient having suffered nothing from the operation.

18th.—The patient has improved wonderfully, and expresses himself as quite relieved from his old sufferings.

9th April.—The patient is now nearly well, and has gone to the country for change of air.

Remarks.—In the first case the stone was very much larger than is usually met with in any part of the urethra. Mr Syme found that it had dilated the prostatic portion of this canal, so as to form a sort of pouch for itself, and he considered that the fistulous opening depended on the presence of the stone. It is probable that the stricture of the urethra caused by the injury received in the perinaeum, tended to increase if not to produce the calculus, and accounted for the great size which the stone attained.

In the second case the singular shape of the stone explained the severity of the symptoms from which the patient had so long suffered.

Excision of the Upper Jaw.

CASE 32.—D. E., æt. 49, admitted 4th March 1862. Ten years ago, the patient noticed a small swelling on the gum of the left upper jaw, which opened spontaneously and continued to discharge matter for seven or eight years. Three months ago, she noticed the left cheek becoming more prominent than the opposite one, and the swelling has been rapidly increasing until her admission here.

On examination, there was a tumour involving the left half of the upper jaw and quite confined to that bone. It grew principally downwards into the mouth, having caused ulceration and absorption of a portion of the left hard palate. There was no protrusion of the eyeball or displacement of the nose.

7th.—Mr Syme cut out the left upper jaw; the cavity was then stuffed with lint, and the wound in the cheek stitched up. The tumour removed had originated in the bone and occupied the antrum; it was of soft consistence, and developed on its outer surface were thin scales of bone.

11th.—The lint was removed from the mouth; the wound has healed in its whole extent by the first intention.

1st April.—The patient is now quite convalescent. Since last report she has had an attack of erysipelas in the head and face, but it has not interfered with the wound, which is firmly healed.

Remarks.—Excision of the upper jaw, when performed for the removal of tumours which are confined to that bone, is a most satisfactory and successful operation; but if the operation be attempted for the removal of a disease which has originated in the base of the skull, and grown downwards, it not only, as is well known, fails in its object, but speedily ends in a fatal result. In diagnosing between a tumour of the upper jaw, which admits of

removal and one that does not, Mr Syme directs special attention to the appearance of the face. If the eyeball be displaced, and the position of the bones of the nose be altered, the case is one which does not admit of operative measures; but if these signs are absent, and if the history of the case shows that the disease began in the jaw itself, then the disease will most likely admit of complete cure by the excision of the affected bone. The soft nature of some of these tumours is no hindrance to the performance of the operation; for Mr Syme has excised the upper jaw with a good result in many cases, where the consistence of the tumour was quite as soft as that of a malignant growth. The complete and speedy healing of the whole extent of the wound in this case is a good example of union by the first intention, notwithstanding the presence of ligatures.

Painful Stump, with protrusion of the Bone.

CASE 33.—J. M'D., æt. 39, admitted 6th March 1862. Nine years ago, the patient had his right limb amputated, through the lower third of the thigh, for a gunshot wound. While the stump was healing, the bone protruded, and continued to do so for six months, when a large exfoliation came away from the end of the femur. The stump healed and gave the patient no trouble until last New-year, when he began to suffer from spasmodic twitchings in it: these have continued to annoy him until his admission here. A few months ago, the surface of the stump began to ulcerate, and the bone to become prominent.

On examination, the stump was conical in shape; its anterior surface presented a large ulcer, and the end of the femur projected.

6th.—Mr Syme made an elliptical incision on either side of the ulcer, dissected the soft tissues from around the bone, and cut off two inches of its extremity. The flaps were left open, as there was some bleeding from the bone.

16th.—The stump is healing well, and the spasms have left the limb.

26th.—Dismissed with a capital stump.

Remarks.—Amputations through the lower third of the thigh require to be carefully performed, and their after-dressing attended to, or they are almost sure to be followed by retraction of the flaps, owing to the large and powerful muscles which are connected with the tissues that are to cover the bone. Accordingly, Mr Syme when amputating through this part of the thigh, makes semi-circular flaps of skin, and divides the muscles higher up the limb, as the flexor muscles on the back of the thigh act more strongly than the extensors on its anterior aspect. They are divided still higher; so that the tendency to retraction of the flaps is thus much diminished.

Cases of Lithotomy.

CASE 34.—D. M'K., æt. 63, admitted 15th March 1862. Seven

years ago, the patient began to make his water more frequently than usual. One year after, he began to suffer from pain at the point of his yard, and to pass blood with his urine. These symptoms have been getting gradually more severe until his admission.

On examination, Mr Syme detected several stones in his bladder.

21st.—Mr Syme performed the lateral operation of lithotomy, and extracted fifteen stones: the stones increased in size as they were removed from the bladder, the last one taken out being the largest. The stones removed weighed altogether $4\frac{1}{8}$ oz. Five of them were of considerable size and triangular in shape, the rest were small: they each presented one or more smooth and polished surfaces, which could be adapted to similar surfaces on the other stones; so that when all were placed together, with their rough surfaces outwards, they made up an irregular mass, which seemed to have been their original form in the bladder.

42th.—The tube was removed to-day. The patient feels quite comfortable.

10th April.—The wound is contracting; but, a few days ago, the patient was attacked with a violent pain over the left kidney, and since then he has not been so well: until this date the patient was progressing most favourably.

This patient gradually sank, and died on the 12th of April; on post-mortem examination, there was found pyelitis with several acute abscesses in the left kidney. The external wound was nearly healed.

The following case which resembles the one just related, in the number and appearance of the stones removed, occurred last session.

CASE 35.—R. M., æt. 68, admitted 29th April 1861. The patient has suffered from symptoms of stone in the bladder for eight years, but during the last four months these symptoms have become much aggravated.

On admission, Mr Syme sounded him, and detected several stones in the bladder.

1st May.—To-day, Mr Syme performed the usual lateral operation, and extracted eight stones. The two largest weighed 14 drachms each, and a third weighed 8 drachms: the rest were smaller. The collective weight of the stones was 6 ounces. Some of them were six-sided, others four-sided, having certain of their surfaces smooth and polished, and fitting similar surfaces on the other stones: the whole, when put together, with their rough surfaces outside, formed one irregular mass.

4th.—The tube was removed: the patient is doing well.

25th.—The patient began to pass his water the right way.

27th.—The patient left the hospital in good health, the wound not being quite closed.

I heard from this patient a few weeks ago: he remained quite well.

CASE 36.—D. S., æt. 66, admitted 19th March 1862. The

patient began to suffer from symptoms of stone in the bladder one year ago.

On admission he was sounded, and a small stone detected in the bladder.

20th.—The patient was again sounded, but the stone could not be felt.

28th.—The patient was sounded a third time, and the presence of the stone distinctly ascertained. Mr Syme performed the usual lateral operation, and extracted one small stone, of a circular form, with a circumference equal to that of a shilling. The tube was taken out on the third day.

12th April.—The patient has continued to progress most favourably since the operation, and is now nearly convalescent.

Remarks.—The number of stones removed in Case 34, is a proof that there was in this patient a great tendency to the formation of concretions, and consequently a liability to irritation in his kidneys; and the bad symptoms which came on so long after the operation, must be ascribed to some mischief having gone on in these organs, as the wound and parts connected with the operation were doing perfectly well.

Pedunculated Fatty Tumour.

CASE 37.—R. P., æt. 53, admitted 18th March 1862. Nine years ago, a small tumour began to form in the right popliteal space, and has since slowly increased in size.

On admission there was a pedunculated fatty tumour, the size of a large orange, hanging from the skin over the right popliteal space.

18th.—Mr Syme made an elliptical incision on each side of the tumour, and having dissected out an expansion or root of the disease from beneath the surrounding integument, removed it.

1st April.—The wound is healed in the greater part of its extent.

10th.—The patient is now nearly well.

Remarks.—I have related this case in order to show how impossible it is to remove effectually such tumours by the ligature, ecraseur, or other like means. I have several times assisted Mr Syme in removing similar growths, and in all of them there was a process or root extending beneath the surrounding skin, which could only be completely taken out by dissection.

Fungus of the Testicle.

CASE 38.—M. C., æt. 27, admitted 17th March 1862. Six months ago, a hard and painful swelling formed over the right testicle. It gradually came to a head, and about three months ago it burst, and some thin matter came away. The opening then began to ulcerate, and five weeks ago the testicle commenced to protrude. The protrusion has been increasing ever since. On examination there was a fungoid protrusion of the right testicle, the size of a hen's

egg, through a large ulcer in the scrotum. The tissues around the ulcer were much indurated. The patient had a very unhealthy appearance, having taken quantities of mercury on two different occasions some years ago.

20th.—To-day, Mr Syme cut off the margins of the ulcer, separated the tissues from around the base of the tumour, brought them over the protruding fungus, so as to completely cover it, and united the edges of the wound with a few silver sutures.

23d.—The sutures have given way, and the edges of the wound have become separated, but they were brought together again by the application of strips of plaster.

1st April.—The wound is healing nicely, the edges being still kept in apposition with strips of plaster.

10th.—The wound is now nearly healed.

Remarks.—This case illustrates well the advantage of Mr Syme's operation for the cure of this disease, and is certainly a great improvement on the old methods of treating fungus of the testicle, by slicing off the protruding portion, destroying it with caustic, or even cutting out the whole gland,—an operation which I witnessed not many years ago. The giving way of the stitches was owing to the great induration of the tissues around the wound, and also to the unhealthy constitution of the patient; but, although this made the progress of the case a little more tedious, it did not in the least affect the result, which was most satisfactory.

Cases of Bleeding from the Rectum.

CASE 39.—L. G., æt. 42, admitted 20th March 1862. For the last twelve months the patient has passed by the rectum, when at stool, considerable quantities of blood, sometimes clotted, sometimes fluid. He has also pain during evacuation, which lasts for some time after the bowels have been moved. During the last few months these symptoms have increased very much, making the patient feel very weak.

On admission, the patient had a most anxious expression, and the appearance of a person suffering from the effects of great loss of blood; his pulse was small and irregular. On examination, there were some small folds of loose skin at the orifice of the anus, and the sphincter muscle was unusually tight, grasping the finger, like a vice, when introduced into the rectum. No other abnormal condition could be discovered.

24th.—To-day, Mr Syme divided the external sphincter muscle, and removed the loose folds of skin.

1st April.—The patient is now quite well, and has had no return of the bleeding; he already feels much better in health.

CASE 40.—G. C., æt. 15, admitted 29th March 1862. Two years ago, the patient began to pass blood by the rectum when at stool. He had pain during the evacuation of his bowels, which also continued for some time after.

On admission, there was no apparent disease of the rectum, except that its mucous membrane was slightly congested.

6th April. — Mr Syme divided the external portion of the sphincter muscle of the anus, with the hope that it might cure the disease.

12th. — The patient has had his bowels frequently opened since the operation, and only a drop or two of blood has passed. We may, therefore, consider that the operation has succeeded in greatly relieving the disease, whatever it might depend on.

Remarks. — These cases form additional examples of hæmorrhage from the rectum, of the nature described by Mr Syme in his "Observations in Clinical Surgery."

ARTICLE III. — *Observations on the Absorbing Power of the Human Skin.* By MURRAY THOMSON, M.D., F.C.S, Lecturer on Chemistry, Edinburgh Medical School.

(Read before the Royal Society of Edinburgh, 17th March 1862.)

MY attention having been directed during the last two or three years to the medicinal action of mineral waters, I have, in examining that part of the subject which relates to their employment in the warm bath, met with a most striking difference of opinion as to whether or not the substances dissolved in such waters are absorbed by the skin; and I find that this subject has been under discussion every now and then for the last sixty years, without any certain conclusion having been arrived at. As the matter is one of considerable practical importance in a physiological as well as therapeutical point of view, it seems strange that there should have been so long any uncertainty as to a question which is apparently so easily settled.

With the desire of making up my own mind on the matter, I have tried a number of experiments, the results of which I am anxious to make known; and, though far from presuming to think that these will settle the disputed point, I trust that, as a contribution to our knowledge on the subject, they may not be thought unworthy of record.

Before detailing the results obtained, I shall briefly state the conclusions arrived at by some of the more important authors who have written on the subject. In doing so, I shall cite, first, the results of a few of those who conclude in favour of absorption by the skin, and then adduce quotations from those who take the negative view of the question.

Previous to the year 1797, Abernethy and Falkner had performed a series of experiments, the results of which led them to the conclusion that substances in solution were absorbed by the skin. I am

not able to refer more precisely to these trials, as this mention of them is only quoted from "Currie's Medical Reports."¹

Braconnot,² writing in 1833, observed that after baths the urine was always increased in quantity; and that whether the water of the bath had been alkaline or acid, the urine always became neutral.

Perhaps the most notable writer on the affirmative side of this question is Madden, who, in 1838, published a monograph on cutaneous absorption.³ He tried a great number of experiments, chiefly on himself, in which he almost always observed an increase of his weight after a bath,—in one instance to the extent of five drachms. Madden also found, in experiments repeated during four successive days, that iodide of potassium in solution was absorbed when he immersed his hand and forearm for an hour and a quarter; on testing his urine, he detected iodine in it.

Homolle⁴ found that if, when his urine was acid, he took a fresh-water bath, it lost its acidity. He ascribed this to the increased flow of urine. He also found potass and soda absorbed so as to be afterwards discoverable in the urine.

M. O. Henri *fls*⁵ states that iodide of potassium penetrates the skin during a bath consisting of a very weak solution of that substance. Henri thinks that other experimenters who have met with negative results erred in employing too strong solutions in their baths.

Carpenter⁶ states that, after baths containing infusion of turmeric, rhubarb, madder, etc., the urine has been tinged with these colouring matters, and that gallic acid has been found in that excretion after the external application of an infusion of a bark containing it.

I cannot pass over this quotation from Carpenter without noticing the somewhat questionable knowledge of chemistry involved in it. The colouring matter of turmeric is only sparingly soluble in water, so that an infusion of it could not have been deeply coloured. Again, gallic acid is not naturally contained in any bark; it is a product of oxidation of tannic acid, which alone is present in, at least, a fresh infusion of an astringent bark. I think this want of accuracy in the chemical history of these substances throws some doubt on the experiments which Carpenter quotes.

MM. Chevallier and Petit⁷ "have proved from direct experiment that one half-hour's immersion in Vichy water is sufficient to modify the fluids of the economy, and cause them to pass from the neutral or acid state to the alkaline. *The urine becomes promptly alkaline.* . . . Some glasses of Vichy water drank fasting often alone produce this effect."

¹ *Vide Reports*, p. 243. Liverpool, 1797.

² *Revue Médicale*, August 1833. Cited by Fardel sur les Eaux Minérales, p. 37. Paris, 1857.

³ *Experimental Inquiry into the Physiology of Cutaneous Absorption*.

⁴ *Union Médicale*, October 1853.

⁵ *Essai sur l'Emploi Médical et Hygienique des Bains*. Paris, 1855.

⁶ *Physiology*, edition of 1855, p. 114.

⁷ Quoted by M. Herpin, *Etudes Médicale*, etc., pp. 185, 186. Paris, 1856.

Heidler¹ refutes the conclusions arrived at by Lehmann of Leipzig, who, in a paper to be quoted below, denied that salts were absorbed through the skin. Heidler's essay is entitled "Die Aufsaugung in Mineralischen Bädern (Prague, 1858)." I have not seen the original paper, but it is evident from Dor's allusion to it that it maintains that saline solutions can reach the blood through the skin.

On the negative side of the question I would refer to the following authorities.

The earliest writer I have met with is Seguin,² who tried an extensive series of experiments, in which he bathed himself and patients in various solutions, such as, in one containing a salt of mercury, in the hope of producing the constitutional effect of that drug; but in no case, he records, did he find absorption of either air, water, or any substance dissolved in them, take place when the skin was unbroken.

Dr Currie of Liverpool³ records some trials he made to administer nourishment through the skin,—the subject of experiment being a gentleman who had the cardiac orifice of his stomach closed by a cancerous tumour. In this case the patient's entire body was bathed in warm milk, beef-tea, etc. No success attended the treatment. There was no increase of weight after the baths. Dr Currie also states that on weighing himself before and after a hot bath of Buxton water, he found his weight rather diminished than increased after half an hour's immersion. And, in reference to this absorption of simple water while in a bath, I may mention that Seguin (*ut sup.*) tried a series of thirty-three experiments similar to that of Dr Currie's just quoted, and with precisely the same result,—no increase of weight.

During the last twelve years a considerable number of observers, and among them names of great authority, have been experimenting on cutaneous absorption and arriving at negative results.

Writing in 1855, Lehmann of Leipzig⁴ denies that the saline substances contained in the mud-baths of Marienbad are absorbed by the skin, as he could not find them in the secretions. In the same year Dr V. Kletzinsky⁵ of Vienna published an account of a number of trials he made, the results of which all went to show that absorption of substances in solution does not take place by the skin. Some of Kletzinsky's experiments were arranged and conducted in such a manner as to make their results very remarkable. I may be excused, therefore, for shortly describing his mode of procedure. His forearm and hand were carefully cleaned and washed, and then

¹ Quoted by Henri Dor (Vevay), *De l'Emploi de la Vase dans les Bains de Mer de la Suede*, p. 44. Paris, 1861.

² Monthly Review, enlarged edition, vol. xii., p. 514.

³ *Vide* Medical Reports, *ut supra*, p. 243.

⁴ Schmidt's Jahrbücher, vol. viii., p. 105.

⁵ *Wochenblatt der Zeitschrift der kaiser, etc., Gessellschaft, etc.*, May 1855, p. 330.

bathed in a solution containing a known weight of iodide of potassium. The baths were taken before breakfast, after active exercise, which produced sweating. Each bath lasted for two hours.

After the bath the following secretions were examined for iodine, —the tears, saliva, nasal mucus, urine, and the serum from a blister raised by cantharides for the purpose of the experiment. The tests used would have detected one-millionth of a grain of iodine, had such been present in any of the fluids examined; but in none was a positive indication obtained. To demonstrate further the non-absorption of the salt, after each bath the forearm and hand were well rinsed with distilled water, these washings were mixed with the water of the bath, and the whole evaporated to dryness. If absorption had taken place, the weight should now have been less than the weight of iodide used; but, instead of that, it was greater. Dr Kletzensky explains the increase to be owing to exosmosis of salts from the blood.

Dr K. tried another set of experiments on the absorption of vapours, as that of iodine, turpentine, etc., by the skin, and he found that they were absorbed. These trials he also conducted in a most careful manner, so as to avoid all chance of error.

A year later than Kletzensky's publication, M. Duriau¹ wrote an account of some experiments he tried, in which he bathed his body in solutions of iodide of potassium, ferrocyanide of potassium, nitrate of potass, carbonate of potass, sulphate of quinine; but he could not find that any of these salts were absorbed.

Lastly, I would notice that there is an article in a late number of the British and Foreign Medical Review² on a subject allied to the present, and in which it comes in for a share of the discussion. The author, in giving, at the end of the article, a summary of the present state of our knowledge of the matter, says, under the head of Medicinal Baths, "The substances dissolved in the baths are not absorbed through the skin."

Before detailing my own experiments, I cannot help remarking that, notwithstanding the great difference of opinion which the foregoing quotations exhibit, the affirmative view of the question is still the more popular and the more commonly met with in standard works; for instance, Carpenter³ gives currency to it, without noticing that some physiologists disbelieve it.

Durand Fardel,⁴ the author of a recent treatise on mineral waters, after quoting papers *pro* and *con*, says "that he does not attach much importance to bathing experiments like those cited, and, at any rate, they cannot change the facts that cures are effected at thermal stations."

The following experiments have been tried at various times during

¹ Archives Gén. de Médecine, Feb. 1856, p. 161.

² Vol. xxiii., 1859, p. 135.

³ Human Physiology, *ut sup.*

⁴ Fardel sur les Eaux Minérales, etc., p. 39.

the last two years. A few of them were made before I had seen Kletzinsky's paper, but most of them after that time. I mention this author thus particularly, because his experiments appear to me to be so conclusive; they have been carried out with so much ingenuity and accuracy, that his results seem to go very far in settling the negative view of the question as the true one. However, they are open to one objection, viz.,—that Kletzinsky exposed to the solution but a small surface of his body as an absorbing medium. This circumstance led me to think that there was still room for a few experiments, in which a larger absorbing surface should be called into action. And this requirement could be sufficiently met by making the trials in an ordinary warm bath. It may be objected to this, that if the whole body be immersed, even excepting the head, there would still be two mucous openings exposed to the solution; but these expose the veriest minimum of absorbing surface, and, moreover, even if they furnished a larger source of error, it was time enough to take measures to avoid such error when a positive result by absorption had been arrived at. The sequel will show that absorption never ensued in any of my trials, and therefore no objection can be made to them on that point.

The experiments were all made on my own person. The general method of conducting them was this:—The baths were taken at night before going to bed, and usually after six hours' abstinence from both food and drink. The quantity of water in the bath was measured; its temperature was taken, and always maintained at the same point throughout the experiment by small additions of boiling water. The quantity of the salt to be used was weighed and dissolved. The state of the urine as to acidity and alkalinity was examined, and, of course, as to the absence of the substance about to be used in the bath. Lastly, the time of immersion was noted. The whole body, except the head and neck, was immersed. No precaution was taken to avoid inhaling the steam arising from the warm water, as no substance was employed which is volatile at temperatures beneath 100° F.

It may be well that I should now proceed to state shortly the circumstances attendant on each experiment.

I. *March 1860.*—I took a bath containing eighty gallons of warm water (the temperature has not been recorded in this case). Dissolved in it there was half an ounce of iodide of potassium. Time in bath, 40 minutes. *Remarks.*—No urine was passed till next morning. On testing some of that which passed then, I could not find iodine. The remainder of the urine, along with all that was voided that day, was collected and evaporated to one-third its total bulk. On testing this concentrated fluid again, I could not detect iodine. The test for iodine made use of in this and the other trials consisted in using a solution of nitrite of potass mixed with dilute hydrochloric acid, instead of chlorine water. Price, who first used this modification of the old test, states that by it he could

discover easily the three-millionth of a grain of iodine. Starch paste is used as well as the above mixture, as in the old test.

II. *January 12, 1861.*—Nine months after the first experiment I made the second. The reason of this long interval will appear afterwards. I used about sixty gallons of water at a temperature 100° to 104° ; and dissolved in it one ounce (avoirdupois) of iodide of potassium. Time in bath, 30 minutes. Urine of all the next day collected and concentrated as before. On testing for iodine, I could not detect a trace.

III. *June 27, 1861.*—A bath taken, containing fifty gallons of water at 92° , with 200 grains of iodide of potassium dissolved in it. Time in bath, 40 minutes. No towel was used after this bath: the water adhering to the skin was left to dry there. As before, the whole urine of next day was collected and concentrated to about one-third, and then, on testing, not a trace of iodine could be found.

IV. *July 16, 1861.*—A bath taken, containing forty gallons of water at 100° . There was mixed with the water 6 fluid ounces of a solution of caustic soda of sp. gr. $1052 = 4$ per cent; this made the bath water quite alkaline to test-paper. Time in bath, 30 minutes. The urine voided before the bath was distinctly acid. The first urine voided after the bath was distinctly acid also; and so was that passed the next morning, as well as several times during that day.

V. *November 16, 1861.*—Took a bath, containing about fifty gallons of water at 90° . Dissolved in it 1400 grains of ferrocyanide of potassium. Time in bath, one hour. Urine of all next day and one-half of the following was collected, and having been concentrated, it was tested for the ferrocyanide, but not a trace was found.

VI. *November 23, 1861.*—Took a bath, containing seventy gallons of water at 98° , with 1400 grains of the ferrocyanide dissolved in it. Time in bath, one hour and a quarter. Urine of all next day and part of the one following was treated as before, but not a trace of the prussiate of potass could be found. In this trial part of the saliva was also collected, I could not find in it a trace of the salt used in the bath.

In order to try whether frequency of bathing would render the skin in any way more permeable, I had a bath every night for six nights in succession—the evenings being from Monday the 2d December 1861, till Saturday the 7th December. The following is the record of these trials:—

VII. Seventy-two gallons of water at 96° , containing 2000 grains of ferrocyanide of potassium. Time in bath, one hour. Urine of next day, treated as before, gave no indication of containing the ferrocyanide.

VIII. Fifty-four gallons of water at 95° had dissolved in it 5000 grains of ferrocyanide of potassium. Time in bath, one hour. Urine of next day, treated as before, showed not a trace of ferrocyanide.

IX. Forty-four gallons of water at 95° had mixed in it 15 fluid

ounces of soda solution of sp. gr. 1070 = 5.5 per cent. Time in bath, one hour. Urine tested twice during four hours preceding the bath was found to be acid. The same reaction was also manifested several times during the next day.

X. Forty-four gallons of water at 97°, containing 26 fluid ounces of the same solution of caustic soda as was used in IX. Time in bath, one hour. Urine before and after the bath, acid.

XI. Forty-two gallons of water at 95°, containing 2 lbs. (avoir-dupois) of common washing soda (carbonate of soda crystals). The solution in this bath was so caustic as to make the skin have, while bathing, the soapy feeling caused by strong alkaline solutions. Time in bath, 45 minutes. The urine both before and after this bath, as well as what was passed during the whole of the next day, was slightly acid.

XII. Thirty-six gallons of water at 93° had dissolved in it 1320 grains of iodide of potassium. Time in bath, one hour. All the urine of next day and part of the following was collected, evaporated to one half of its whole bulk, and this fluid carefully tested for iodine, but the result was entirely negative.

I have here recorded the results of twelve experiments. I might add to these the results of other three which were tried during the interval of nine months that elapsed between experiments I. and II. The reason why these were not entered in their proper order was, that, unfortunately, when from home I lost the note-book containing the details concerning them. My memory, however, is quite clear as to the negative result obtained in them. In no case was a trace of the salt used (iodide of potassium in two baths, and ferrocyanide in a third) found in the urine.

In order to make the foregoing experiments still more useful as quantitative trials, as well as to compare absorption from the common mucous surface of the stomach, etc., with absorption from the skin, I tried the following:—I swallowed a grain of iodide of potassium at night (December 10, 1861), and on testing the urine next morning, and again after concentration, I could not detect iodine. I then on another night swallowed a grain and a half, and again failed to find iodine in the urine. On another night two grains of iodide were taken, and this time iodine was easily discovered in the urine next day twice or thrice, without concentration, but the reaction was not strongly given.

Two similar experiments were tried with ferrocyanide of potassium, when I found the smallest quantity of that salt which could be swallowed and afterwards detected in the urine was five grains. Now, to connect these experiments: it would appear that, if a half-pint (10 fluid ounces) of the water in the bath (of experiment XII.), had entered the blood through the skin—not an extravagant quantity, one would think, when the whole body was immersed—we should have had amply sufficient ($2\frac{1}{4}$ grains) of the iodide in the system to have enabled us to detect it in the urine as it passed out.

So, in experiment VIII., if 10 fluid ounces of the bath water had been taken up, I should have found ferrocyanide in the urine without concentrating it; but not a trace of that salt could be found in all the urine of the next day evaporated to one-third of its whole bulk.

As my object in undertaking these experiments has been to realize in my own case the truth of many statements which have been made as to the curative power of mineral water baths, depending on the absorption by the skin from them of certain salts and other substances, which they hold in solution, I have, in the foregoing experiments, followed out the circumstances pursued in the ordinary practice of bathing at thermal and other mineral water stations. If I have varied from that, it has been in a direction more favourable to absorption.

In the greater number of the baths, it will be seen that I did not employ a heat so high as to produce congestion of the skin, which might have been followed by diaphoresis, the very opposite process to absorption. I did not notice sweating after any of the baths.

The quantities of the substances used in the baths were varied considerably; so as to obviate any objection that might be made on the ground that the solutions were either too weak or too strong.

The time through which a bath lasted was never less than half an hour,—this being about the maximum period of a warm bath,—but, to favour absorption, the time was prolonged in most cases to one hour.

Before concluding this paper, I also desire to record a few experiments on another aspect of the same subject. Though the division of opinion among observers is great as to the absorption by the skin of substances held in aqueous solution, there seems to be less difference when other media than water are employed; at least, one might be led to infer this from the frequency with which ointments are still used in medicine, and also from the practice of painting chronic abscesses, swollen glands, etc., with tincture of iodine, which is still much in fashion. In both of these practices the substances mixed up into the ointment and dissolved in the tincture are held to pass through the skin and reach the blood before they produce any beneficial effect.

In reference to absorption of iodine applied to the skin in the form of tincture, I have to remark that on testing the urine of patients over whose body I had applied it embracing a considerable extent of surface, only in one case was iodine found in the urine. This exceptional case was that of a strumous child who had a non-fluctuating swelling, evidently glandular, behind the lower jaw. I applied a weakened tincture of iodine in the usual way, and detected iodine in the urine afterwards. The occurrence of the iodine in this case is, I think, sufficiently accounted for by the proximity of the affected part to the nose and mouth, through which, and not through the skin, the iodine in the form of vapour had reached the blood, and thence the urine.

I have made myself the subject of experiment on this point also. On two occasions, in the summer of 1860, I painted tincture of iodine over the whole dorsum of each foot, and collected the urine passed for 18 hours after doing so; but no iodine could be detected in either instance.

Lately, I have tried two similar experiments with the iodine ointment of the Edinburgh Pharmacopœia. In the first, on the evening of 14th December 1861, I spread over both feet and legs, as high as the middle of the tibia, a moderately thick coating of the ointment. It should be noted that in this and the next trial I did not use prolonged friction, but applied the ointment with only a moderate amount of rubbing. Cotton socks were worn after its application. The socks no doubt wiped off some of the ointment, but there was still enough left to give the skin the opportunity of absorbing it. No urine was passed till next morning; and that, along with all that passed throughout the day, was treated as before described, and then tested, when, much to my surprise, it did not contain a trace of iodine.

The second trial was made on 21st December 1861, and was quite similar to the first. It was attended with a like negative result.

I have now to remark, in conclusion, that not only has absorption by the skin been greatly exaggerated, but that, in the case of substances in aqueous solution, it seems to be the exception, not the rule, for absorption to take place; and, in the case of ointments, etc., some substances so applied appear to be absorbed and others not. For instance, I have nowhere read any contradiction to the well-known statement that mercury is absorbed inunction. My own trials, though too few to lead me to an opposite conclusion with regard to iodine and iodide of potassium, certainly tend in that direction.

As to the tincture of iodine, my many experiments with it compel me to say that it is seldom or never absorbed. As far, therefore, as the specific action of iodine is concerned, this remedy might be abandoned. At the same time, I am quite aware that painting with tincture of iodine is held to operate beneficially as a counter-irritant. I do not for a moment question this view of its use. My experiments lead me only to the conclusion that the iodine in it is not absorbed.

ARTICLE IV.—*An Inquiry into the Chemistry and Properties of the Cytisus Laburnum.* By THOMAS SCOTT GRAY, M.D., L.R.C.S.E., Dundee.

(Continued from page 919.)

Physiological Action on the Rabbit.—I procured two rabbits, and during three consecutive days gave them nothing to eat except the green leaves of the *Cytisus laburnum*. They seemed to relish them, as they ate them frequently and in large quantity. After eating a

considerable quantity, they at first showed a little excitement. The breathing became hurried, and the heart could be felt beating with increased rapidity. These indications were succeeded by languor, the respiratory movements becoming slower, the eyes suffused, the eyelids closed, and involuntary movements of the head indicating that the animal had fallen asleep. In an hour or two, they emerged from this state of depression, with their appetite rather increased than impaired, and again began greedily to devour a fresh supply of the leaves, with a similar result. Their urine on the second day became turbid, and, on cooling, deposited a white sediment. I now, during the next two days, substituted the pods containing the seeds for the leaves, when the same symptoms were produced, but were more distinct and marked in their character. The eyes were more suffused, the unsteadiness of the head was more evident, and not unfrequently there appeared spasmodic twitchings of the limbs. They showed no indication of pain, but there seemed to be some peculiar sensation in the throat or mouth; for, in about ten or twenty minutes subsequent to eating the pods, they not unfrequently began to micturate and drink their urine from the end of the urethra. They also, after recovering from the more immediate effects of the poison, began to rub their tongue against surrounding objects, and, when examined with the finger, it felt very hot and dry. This feeling may be caused by the elimination of the poison by the glands of the mouth; for I have observed the same symptom in cats and dogs, and when it is taken by the human subject its taste is very distinctly felt in the morning. The symptoms mentioned disappeared in about two hours, when the animals again ate the pods with the same transient effect. I continued to administer the pods and seeds every two hours during the day, for two successive days; and at the end of this period they seemed as well as at the beginning. In addition to the pods, I now made them swallow from time to time three or four grains of the watery extract, rolled up in the form of pill, and smeared over with lard. No uniform effect was produced on the pupils, as they were sometimes dilated and at other times contracted. The urine, which at first contained much solid matter, soon began to clear, and was passed in larger quantity after the first two days. The feculent matter, after the first two days, began to be passed in small hardened masses. When the additional doses of the extract were being administered, there were not unfrequently spasms of the spinal and abdominal muscles. The symptoms are very slight when the substance is introduced by subcutaneous injection, as absorption takes place very slowly. The other, which was a full-grown one, continued to live, although the extract was given in large repeated doses.

One of the two rabbits, after receiving repeated doses, died, after presenting the usual symptoms. As I was anxious to contrast the condition of the internal organs with the post-mortem appearances of the other rabbit, I killed it half an hour after the

administration of a large dose. The appearances in the two rabbits were the same, and as follow:—On cutting down on a part into which I had injected some of the decoction two days previously, I found some of the fluid not yet absorbed, and the part itself slightly congested. This congestion, I consider, arose merely from the fluid acting as a foreign body in the part,—the absorption taking place so slowly,—and was not due to any local irritant properties inherent in the drug itself. On making an examination of the abdominal cavity, I found the venous system engorged with dark blood. The stomach and intestines contained a greenish-looking matter, but there was no trace of inflammation in any part of the canal. The liver looked healthy, though a little darker than usual, and the gall-bladder was distended with a dark-reddish fluid. The kidneys appeared normal, and the spleen contained much venous blood. The bladder contained a small quantity of a reddish-coloured fluid, but presented no trace of inflammation. The veins of the brain, neck, and spinal cord were engorged with blood. There was no abnormal quantity of fluid in the ventricles. The lungs presented a reddish-white appearance, and were lying collapsed in the back of the thoracic cavity: on being cut and squeezed, they gave out a frothy matter similar to that which was also present in the windpipe. The two auricles and the right ventricle were distended with venous blood. The left ventricle was firmly contracted, and contained little blood. The pulmonary arteries and veins were also filled with venous blood.

The laburnum is thus not very deleterious to rabbits; and yet, when a drachm or two of a slightly-concentrated decoction is introduced into the stomach by a catheter, the breathing at once becomes rapid, and the animal in a few minutes moves back its head, and then makes a few spasmodic movements, which are followed by cessation of the respiratory movements. The heart's action continues for a few minutes; and in less than ten minutes from the time that the solution was introduced, the animal has ceased to live. The venous system in such cases is found engorged with dark blood. I do not think that death in such cases is due to the action of the laburnum, but rather to the shock given to the nervous system by the introduction of the catheter, in conjunction with the sudden distension of the stomach with fluid, which interfere with the action of the diaphragm, and lead to the stoppage of the respiration. Moreover, the action of the laburnum is seldom manifested in less than fifteen or twenty minutes after the administration of the poison; and the shock arising from the introduction of the catheter would rather diminish than increase the absorption of the fluid. The introduction of poisonous substances into the stomach of the rabbit in this way may often lead to fallacious results. It is well known that, during the winter season, when food is scarce, rabbits and hares have recourse to the laburnum bark, which they strip from the trees and eat;

and in some parts of the country laburnum trees are planted for a protection to the surrounding plantations. These animals, no doubt, find in this narcotic a temporary relief from the feeling of hunger which they cannot allay in the natural way. Professor Christison states that Dr Ross of Dornoch found that grains impregnated with the infusion produced speedy death in the rabbit, with convulsions as the leading symptoms. I have repeatedly tried the experiment, by giving rabbits nothing else to eat for several successive days, but in no case did the animal die. It showed the symptoms of drowsiness already mentioned, and then rapidly recovered. The symptoms produced by the principles given separately are those arising from the action of narcotics, and similar to those already enumerated.

Physiological Action on the Dog.—The symptoms produced on the dog by the crude drug are so similar to those produced on the cat that a minute enumeration of them would be superfluous. In very small doses it acts as a hypnotic; and when these are repeated at short intervals during two or three days, the animal's bowels become constipated, but when given in large doses during a corresponding period it acts as a slight aperient. This latter result, I shall afterwards try to prove, may be due to its action on the liver. When large doses are introduced into the animal's system, in less than ten minutes it begins to show signs of uneasiness, and soon after retches and vomits. These are succeeded by narcotic symptoms, provided the substance has been so introduced into the system that it cannot be ejected by vomiting. We find, when death supervenes, the lungs collapsed and of a whitish colour, the cavities of the heart containing dark blood, and the venous system engorged, but no inflammatory indications. Spasm of the limbs is a frequent symptom when the drug is administered in fatal doses. The pupils are sometimes dilated, and at other times contracted. A diuresis is produced when small repeated doses are continued during two or three successive days. The poison would seem to be partly eliminated by the skin, for after the administration the animal begins to scratch itself in various parts. When the principles are administered separately the symptoms are those of narcotism, without that tendency to vomit which follows the administration of the crude drug, unless when given in very large doses. This result is most manifest when they are administered in the solid form, or mixed with the food, as we then avoid the irritation produced by the introduction of the catheter, or the shock which is connected with subcutaneous injection. Laburnic acid slightly contracts the pupils, while laburnine and cystine have a tendency to dilate them. When cystine and laburnic acid are administered in a state of solution, vomiting usually occurs.

Action on the common Earthworm.—When this animal is placed in a decoction of laburnum, or in a solution of any of the principles, it at first twists itself about, but soon becomes flaccid and motionless. When it is removed some minutes after it presents this

paralyzed condition, it is found to be still alive, and to move on the application of irritants; and a local paralysis may be produced by immersing only a small part of the worm in the fluid.

Action on the Frog.—When the decoction of laburnum is injected into the abdominal cavity, this animal speedily dies, and spasms of the posterior extremities usually precede death. Cystine and laburnic acid produce similar results. Large doses of laburnine are required to kill this animal. The animal lies motionless, with its muscles relaxed, and only shows signs of life on the application of some irritating substances.

The decoction of laburnum, or a solution of any of the principles, is equally deleterious to the infusoria.

Laburnum also exerts a poisonous influence on plants. I obtained two slips of heath, and put one into water, and the other into a decoction of the bark. The flowers of the second began to droop in forty-eight hours, and rapidly became faded and shrivelled; the rest of the slip also soon beginning to wither and die. The other slip remained fresh for four or five days. I made a similar experiment with two slips of phlox, with a like result.

Physiological Action on the Human System.—Small medicinal doses of the decoction produce in the first place a little excitement. The patients will tell you that they become excited and a little frightened. There is slight increase of the pulse, and the respiratory movements are also a little accelerated. This effect is transitory, and the pulse soon falls to a little below the normal standard. These symptoms are succeeded by langour and tendency to sleep. It is generally believed that laburnum in small doses acts as an irritant and produces purging; but this is not the case, as I have given it in small doses, week after week, to myself and others, and in none of the cases did this result follow. The bowels, on the contrary, almost always became constipated. In one class of cases only, constipation was not produced, namely, in those who were subject to bilious dyspepsia. In such cases it had the effect of regulating the bowels, increasing the appetite, and improving the powers of digestion. It may do so from its bitterness acting as a stimulus to the peristaltic movements of the stomach, but more probably it has a more permanent effect, by increasing the tonicity of the muscular power, by being absorbed into the blood, and influencing the polarity of the nervous centres. It very seldom produces diaphoresis, but has a slight action as a diuretic. If we measure the quantity of urine passed daily before the administration of the drug, and again after we administer it, we shall find in the latter case that the quantity is increased, usually to the extent of a few ounces. In some cases we shall find that there is scarcely any perceptible increase. Laburnum produces no uniform action on the pupils.

The great objection to the use of the crude drug is its liability to cause sickness, followed by vomiting. We cannot give it in such a

dose as will produce a well-marked soporific effect with any certainty that it will not be followed by these disagreeable symptoms. We may, however, avoid them by administering it in the doses which I have recommended ; and although it may not always produce sleep, it will still exercise an anodyne influence in allaying irritation, and be followed by many important results. The first doses may produce sickness without the subsequent ones being followed by any such result ; and even although sickness and vomiting do supervene, they need not occasion any uneasiness, for they soon pass off without injuring the patient. Laburnum in the crude form colours the stools, giving them either a green, clay, or dark appearance. The dark colour may be due to the action of the acid on the bile. The crude drug would seem to have the power of regulating the biliary secretion. It would be difficult to prove this, as it would require a series of experiments such as those made by Dr Scott on the action of mercury as a chologogue. I can only state that this drug has a peculiar alterative power in biliary derangements. These are the effects of small doses of the crude drug in the human system.

A number of cases are on record in which children have been attacked with severe symptoms after eating the seeds. Some of the symptoms enumerated are quite irreconcilable with the results of my own experiments. In the *Lancet* for 1840-41, p. 552, eleven cases are described by Mr Bonney of Brentford, in which he states that boys from seven to thirteen years of age, who had eaten from one to five of the seeds were attacked with serious symptoms such as the following—dilated pupils, languid pulse, nausea, severe vomiting, and purging. These cases must necessarily have been very imperfectly described. It is stated in the report that medical advice was not obtained until an hour after the symptoms began to manifest themselves ; so that the effects produced must have nearly all passed off before Mr Bonney's arrival. Emetics were then administered. He does not mention the emetic he employed, or whether he administered it indiscriminately to all of them. He states that purging occurred in three out of the eleven who had partaken of the seeds ; and I am inclined to think that in these the purging was due to the fright and emetic, and not to the action of the laburnum. He does not mention when the purging supervened ; but it is not probable that it took place before the emetic was administered, which must have been an hour and a half subsequent to the eating of the seeds. Moreover, he must have derived his information about the number of the seeds eaten from the boys themselves, upon whose statements in such a case he could not place implicit reliance. It is quite absurd to suppose that a boy of the age of nine years would suffer from vomiting and purging after having eaten only one seed. I admit that nausea, vomiting, and subsequent depression are the symptoms which will follow an over-dose of the seeds or any other

part, of the laburnum ; but I hold we have no sufficient criteria derived from recorded cases upon which we can come to the conclusion that small doses of the crude laburnum produce a cathartic action. I have found, on the contrary, that when I gave three or four drops of the solution of the strength already mentioned to children five or six years old, constipation was usually the result, although I continued this dose thrice daily for more than a week. Moreover, I have proved, by injecting it into the cellular tissue and peritoneal cavity, that it is not an irritant ; and in every case in which I have found vomiting to occur in the human subject, this symptom was always preceded by nausea and sickness, proving that the vomiting is due to some action on the nerve centres, and not to any local irritation produced on the stomach. There are two or three other cases on record in which purging is said to have taken place. I think that when it does occur, it is due to the nervous shock. In those cases in which it is said to have occurred, it was preceded by vomiting and ejection of the seeds from the system before much of the poison could have been absorbed. There are other cases on record in which serious symptoms supervened without purging taking place at all. I am confident that subsequent investigations will confirm the statements I have made, that the crude drug is not an irritant or a purgative in small doses.

In the three following cases the poison must have remained a considerable time in the stomach ; and although the symptoms were severe, purging does not seem to have been produced.

The first case will be found in the *London Medical Journal*, Vol. lxii., 1829. A girl, aged four, having eaten some laburnum flowers, became affected in the following manner :—She had pallor of the countenance, convulsive twitchings of the muscles of the face, cold skin, short and laborious respiration, nearly imperceptible pulse, and occasional attempts at vomiting. She got some warm wine and water, then vomited the flowers, and soon afterwards became quite well.

Two cases have been described by Dr Traill, in which he states that the symptoms were purely narcotic. The first was a child of two years of age, who, after eating some of the seeds, became pale, cried violently, and then became insensible. There was also coldness of the body and lividity of the face. Vomiting was induced and the seeds were ejected from the stomach. The child soon became quite well. In the other case, insensibility was the leading symptom ; but there was also present a weak pulse and frothing at the mouth. The child was treated in the same way, and soon got quite well after vomiting the seeds. There is no mention of purging having occurred in either of these cases.

Another remarkable case is described by Professor Christison, in the *Edinburgh Medical Journal*, vol. lx., 1843. In this case a cook partook of a considerable quantity of broth which had been seasoned with laburnum bark by one of the other servants. She

remarked a strong peculiar taste in the broth, and in five minutes was attacked with violent vomiting. The retching and vomiting continued to recur throughout that evening, night, and the following day, with shiverings, pain in the abdomen, and great debility. Purging commenced in the morning of the second day. The sickness, vomiting, and purging continued to recur from time to time, and she fell off in looks, flesh, and strength. She was visited about seven months afterwards by Dr Ross, who was legally employed to investigate the case. He found her labouring under symptoms of gastro-intestinal irritation, with vomiting, especially after food, pains in the abdomen increased by pressure, diarrhœa, tenesmus, sanguinolent stools, flatulent distensions of the belly, great debility, impaired appetite, hurried, laborious breathing, a frequent, easily excited pulse, and an anæmic cardiac bruit, with a pale bloodless countenance, and a pale glazed tongue. The case, as Dr Christison observes, is certainly a curious anomaly. The vegetable principles could scarcely have failed to have been ejected from the system, since violent vomiting ensued five minutes after she had partaken of the poison, and during this short period very little of the poison could have been absorbed, more especially since it must have been considerably diluted. It is probable that though the nausea and vomiting were due to the action of the poison, the subsequent purging forty-eight hours afterwards must have arisen from the shock given to the nervous system, partly from the mental emotion which must have been excited by the suddenness of the attack, and partly from the frequent recurrence of the violent exhaustive efforts of vomiting; and that the exhaustion was kept up and increased by the continuence of the diarrhœa. We can hardly suppose that the diarrhœa was caused by the direct action of the laburnum, since it occurred so long subsequent to the administration of the substance, very little of which could have been absorbed into the system. It is well known that depressing emotions are in certain individuals followed by profuse diarrhœa, and I think it is to this cause that we must attribute the diarrhœa which has occurred in some accidental cases of poisoning with the laburnum. Moreover, it is not unlikely that the cook, who had no medical attendant with her at the time of the attack, would have recourse to some nostrum in which she had confidence in order to obtain relief, and the most likely thing that the unprofessional mind would suggest in such a case would be an aperient. I have resided a short time in the locality in which this case of poisoning occurred, and I have found that in every case of sickness amongst the poorer classes, aperients were employed before a medical practitioner was consulted. The cases of accidental poisoning with laburnum which are recorded, are more or less imperfect, inasmuch as the symptoms of those in which purging has occurred have been collected long subsequent to the occurrence, or this phenomenon has supervened after the patient

has undergone a course of treatment in which emetics held a prominent place. It is, however, probable that laburnum, when administered in large doses, will produce an aperient effect, more especially in those who are the subjects of bilious dyspepsia. It would produce such a result in consequence of increasing the secretion of the bile, and not by any inherent irritant property. Large doses given to adults will in themselves counteract the ultimate effects of the drug, by the almost certain and rapid super-vention of sickness and vomiting, and, in consequence of the latter, ejection of the poison from the system will take place. Children, on the other hand, by the weakness of their nervous power, and their susceptibility to the influence of narcotics, might succumb to the action of the drug before vomiting could occur.

The cytisine of Chevallier and Lassaigne, which I have shown to be a compound substance, will, in the dose of half a grain, produce acceleration of the pulse and of the respiratory movements, succeeded by languor and depression; sleep is also produced in many cases. If repeated in small doses, it slightly increases the quantity of urine, but has no very marked action on the bowels. It also increases the appetite. The great objection to the use of the substance is, as in the case of the crude drug, the tendency to cause sickness and vomiting. We can seldom give it in such a dose as will produce a deep soporific effect, or continue it for any length of time without the occurrence of those disagreeable symptoms. I took five grains of this substance, and found the result to be very similar to that produced on M. Chevallier, who took eight grains. There was a temporary increase in the rapidity of the pulse and the respiratory movements, and in twelve minutes I became giddy. The giddiness was rapidly followed by sickness and vomiting. There was subsequent languor and tendency to sleep, which continued about two hours, and then gradually passed off. The pupils were dilated. I did not, like M. Chevallier, experience any spasm or convulsions beyond those connected with the mechanism of vomiting. I partook of nothing to interfere with the action of the drug. I was quite well in four hours, with the exception of a slight headache. I did not observe any subsequent effect on the economy.

Physiological Action of Laburnic Acid.—This substance, when given in doses of from two to six grains, in about fifteen minutes causes a little excitement of the pulse and respiration; and in ten minutes more the patient gets drowsy, and gradually falls asleep. The sleep may or may not be disturbed by dreams. I have found, on inquiry, that those who complain of these phenomena are similarly affected when under the influence of morphia or laudanum. If the patients are strong, there is little or no diaphoresis produced, but if weak, they commonly perspire freely. The pupils are usually contracted, and the patients awaken from their sleep without any disagreeable symptoms either at the time or subsequently. I have

continued to take it in medicinal doses repeated every three or four hours for nearly a week, and at the end of this period the appetite and powers of digestion were very much increased. There was little or no perceptible change in the quantity of urine passed during this period. The intestinal evacuations were slightly darkened in colour, but otherwise similar to what they were before the administration of the drug. I have, however, seen it in some cases produce a slight aperient action. It does not usually produce sickness when given in the doses which have been recommended. I have not seen the effects of very large doses on the human subject, but I have no doubt, from what I have seen it produce on the lower animals, that they would be the ordinary symptoms of narcotism.

Action of Cystine.—This substance produces similar symptoms. It acts as a soporific and anodyne, and does not cause sickness and vomiting unless when given in too large doses. I have found sickness occur in some cases after the first dose, without the subsequent doses being followed by any such result. It improves the appetite, and increases the powers of digestion. It causes slight dilatation of the pupils. It acts as a very gentle aperient, and gives to the faeces a dark or yellowish colour. In some cases it excites diaphoresis. The sleep produced by this substance is more apt to be attended by dreams than that caused by laburnic acid. The dreaming thoughts are more or less incongruous, and usually of a pleasant kind. I have seen it cause slight salivation.

Physiological Action of Laburnine.—The symptoms produced by this substance are so similar to those produced by laburnic acid that I need not again enumerate them. The pupils are slightly dilated. It has no aperient action on the intestinal canal, but rather tends to produce constipation. It does not cause sickness, and forms a very good hypnotic, especially for children. It very often produces slight diaphoresis. The diuretic action of this and the other two principles is not uniform, but there is usually a slight increase in the quantity of the urine.

Modus Operandi of the Laburnum.—I am of opinion that laburnum acts by being absorbed, and that it then passes through the circulation to the nerve centres, and so modifies those connected with the functions of respiration as to prevent the complete change of venous into arterial blood. The imperfectly-oxygenated blood circulating through the encephalon then so affects the nerve centres already diminished in their polarity by the direct action of the poison, as to paralyze the respiratory muscles. The heart, in consequence of the stoppage of the respiration, soon becomes distended with blood, and death supervenes. The absorption of the poison is proved by its gradual disappearance when injected beneath the skin or into a serous cavity, as well as by the more rapid action when introduced into the latter.

Therapeutical Action of Laburnum.—*Action of the Crude Drug.*—It is very beneficial in cases of bilious dyspepsia in which the

patient is subject to periodic attacks of bilious vomiting and diarrhoea, with constipation in the intervals. It should be taken in small doses which do not sicken the patient, thrice daily before meals, and continued for about six weeks or two months. The patient's appetite will be increased, and the bilious attacks will cease to recur. It may be used with great advantage in all disorders of the liver, and more especially in those unconnected with organic disease, in which cases it can only act as a palliative. It is also useful in children who suffer from irritability of the stomach, and vomit after food has been taken; I refer to those cases which are not due to dentition where it may succeed when the usual means fail. The dose should be given about ten minutes before food, and so regulated as not to cause sickness. In small, frequently-repeated doses it forms a good palliative in whooping-cough. I have used it with advantage in the nausea and sickness occurring in the early months of pregnancy. It may be employed with success in removing prurigo, and in such cases we may employ it internally as well as externally. The patient should take it every three or four hours, in doses as large as can be taken without producing sickness. In such cases it would seem to act as a stomachic tonic. It will, like other narcotics, soften the cough in bronchitis. It may also, in small repeated doses, be used in inflammatory affections of a periodic nature. I have employed it as a palliative in one or two cases of emphysema, with very good effect in allaying and preventing the paroxysms of dyspnoea.

Action of the Principles.—I have not had sufficient time to test the properties of these principles in the cure of disease so extensively as I could have wished, but I am confident that a more extensive and careful investigation will elicit facts of no small interest and practical value. There is one class of cases in which cystine and laburnic acid will be found very valuable. I allude to disorders of the digestive system, and more especially those in which there is pain and vomiting after the introduction of food into the stomach. They will in such cases check the vomiting, and at the same time improve the appetite, and increase the powers of digestion. In such cases they are to be preferred to opium and its preparations, which sooner or later impair the functions of the digestive organs. They have also the advantage of not producing constipation. These two are also useful in disorders of the liver unconnected with organic disease. The three will readily produce sleep if such a result is desirable, and they may be employed in neuralgia and other painful affections. In such cases they may conveniently be substituted for opium, more especially if any idiosyncrasy in the constitution of the patient prohibit the use of the latter. I have no doubt but that cystine, from its intense bitterness, will be found to be an anti-periodic of no mean power. Laburnine has calmative, anodyne, and soporific properties, while cystine and laburnic acid have these combined with valuable stomachic virtues. Cystine and laburnic

acid may be made to have the same effect on the bowels as opium, by combining them with gallic acid.

Incompatibles.—The crude drug is incompatible with the salts of lead, salts of iron, tannin, and the preparations of iodine.

Cystine is incompatible with tannin and the preparation of iodine.

Laburnic acid is incompatible with the salts of lead and iron.

Treatment when Laburnum has been taken in Poisonous Doses.—Little or no treatment will be required when the crude drug has been given in large doses to adults. This substance, in a dose much less than that which would be required to destroy life, will occasion nausea, sickness, vomiting, and the ejection of the poison from the system. Emetics, in such cases, will only do harm by increasing the subsequent exhaustion. Our duty is rather to rally the patient by stimulants, such as the preparations of ammonia, and more especially the spiritus ammoniæ aromaticus. I have tried other stimulants in bringing about the recovery of the lower animals, but none answer so well as this preparation. It may be owing to the remarkable property which ammonia has, in addition to its stimulant action, of increasing and preserving the fluidity of the blood, and thus facilitating its circulation through the capillaries. If we suspect that there is still some of the poison remaining in the stomach, we should administer a teaspoonful or two of charcoal. This substance rapidly absorbs the principles of the laburnum in the stomach, renders them inert, and carries them out of the system by intestinal evacuations. When charcoal is given simultaneously with or immediately after large doses of laburnum to dogs, they only show slight drowsiness. If similar doses were given without the charcoal they would be followed by severe vomiting. I have tried in the same way the preparations of iodine and other drugs which have been found useful in cases of poisoning with the active principles of the vegetable kingdom, but without any decidedly beneficial result. The preparations of ammonia do not prevent the poison acting on the system, but counteract the subsequent depression. With children, in whom vomiting in some cases may not occur spontaneously, I should recommend an emetic. If vomiting has already occurred I should not give an emetic, but should rely on charcoal and small, frequently-repeated doses of the spiritus ammoniæ aromaticus. This treatment, if employed in time, will, I have no doubt, succeed in all cases. I may mention that I have succeeded in reviving animals after the respiration had ceased, by artificial respiration combined with the extraction of a small quantity of blood, by making an opening into the right jugular vein in the lower part of the neck. The bleeding relieves the right cavities of the heart, which have become over-distended with blood. In such cases artificial respiration alone will rarely succeed.

Practical Conclusions.—1. That the crude drug has no irritant properties, and that the sickness and vomiting which it produces

when administered in large doses are due to some action on the nervous system.

2. That these disagreeable symptoms may be, to a certain extent, avoided by administering it in small doses.

3. That it is not, as is generally supposed, a purgative when administered in small doses.

4. That in small doses it has useful therapeutic properties.

5. That the activity of the drug is owing to the presence of three vegetable principles, and not of one, as stated by MM. Chevallier and Lassaigne.

6. That the principles, when carefully separated, have valuable narcotic and stomachic properties.

7. That they have not the tendency of the crude drug to produce sickness and vomiting, unless when given in very large doses.

8. That these principles are yielded in such quantity by the laburnum tree that they might with advantage be introduced into the pharmacopœia.

9. That the principles are yielded by all parts of the tree, but in largest quantity by the bark and seeds.

10. That the administration of charcoal will be found useful in the treatment of poisoning by laburnum.

TAY STREET, DUNDEE.



ARTICLE V.—*On Diseases of the Cerebellum.* By Dr GEORGE SHEARER.

(Read at the Medical Institution, Liverpool, on 23d January 1862.)

CASE 1. *Summary.*—Cephalalgia; vertigo; amaurosis; deafness; divergent squint; impaired balancing or co-ordinating power; automatic or involuntary cries; indications of crossed motor paralysis; convulsion fits; intellect clear. Tumour growing into cerebellum from meatus internus of right ear. Waxy kidneys.

Mary Bradley, æt. 37, admitted to Liverpool Workhouse Hospital, under the care of Dr Gee, on 10th November 1860.

Patient is a thin, emaciated woman, complaining of pain in her forehead, of blindness (amaurosis with dilated pupils), and of "rheumatic pains" in her limbs. She is quite helpless, and has been bed-ridden for four months; so that bed-sores have formed over the sacrum and trochanters. She has marked divergent squint. She appears to have suffered from frontal headache and vertigo for at least twelve months; gradual loss of vision, amounting at length to complete amaurosis, for eight months; loss of hearing for four months, partially recovered from during the last month, and now confined chiefly to the right ear; loss of power to walk or sit erect for five months. When propped up in bed, there is a constant tendency to fall over to one side or other. She can, however, draw up her legs in bed; but there seems to be less power in the left than in the right leg. At one time the arms are said to have been paralyzed; but this is not now the case.

During the fortnight this patient was under observation, she was a source of annoyance both to her own and the adjoining wards, from an uncontrollable tendency to shout and scream in the most vociferous manner, suddenly and without any apparent reason breaking out into the most piercing and piteous wailings, which she continued at short intervals throughout the night, and carried on occasionally also during the day. Of course she slept little, and only during the daytime. Her noisiness appeared to be utterly beyond voluntary control. Repeated expostulations and warnings were vainly tried, and even threats of confinement in the asylum failed to entail silence upon her. The loudness of her cries seemed to bear no relation to the intensity of her sufferings, for she afterwards declared that she did not cry out because of the pain, but because she could not help doing so. Frequently she denied the existence of pain altogether. Her cries, in short, were automatic rather than voluntary, and closely resembled the long-continued piercing cries or wailings which are extorted from animals whose nervous ganglia are irritated or cut into by the knife of the vivisector. She had been habitually intemperate, and had been subject to frequent epileptiform convulsions during the last four months. It was observed that she was quite ready and clear in answering questions when loudly spoken to,—in fact, there was no impairment of the intellectual faculties. She gradually wasted and pined away, and died a fortnight after admission.

Post-mortem examination revealed a tumour of the size of a walnut growing from the internal meatus of the right ear, slightly attached to the auditory nerve. It had formed a nest for itself amongst the folia of the right hemisphere of the cerebellum, which it had, by pressure, opened out and somewhat softened. The right side of the pons bore also a visible concave impression; but none of the nerves arising at this part appeared to have been seriously incommoded. The tumour presented, on section, a few hæmorrhagic-looking spots, and near the surface a small cyst. It was fibro-plastic in structure, consisting of numerous cells of small size interspersed amidst meshes of fibres. The kidneys were waxy, but the urine had not been examined: there was no dropsy. No other diseased organs were found.

N.B.—The greater enfeeblement of the left lower extremity observed in this case was doubtless owing to the pressure of the tumour upon the right side of the pons.

CASE 2. Summary.—Cephalalgia; temporary paralysis of right side, of sphincters, and of speech, without loss of consciousness. Recovery from paralytic symptoms. Supervention of comatose symptoms, but intellect only in abeyance; vision perfect. Deepening insensibility; loud and distressing, almost incessant, automatic moanings. Death. *Post-mortem.*—Large clot in left lobe of cerebellum, composed of two portions,—a recent central portion, consisting of recently effused blood; and a lighter coloured circumferential portion, containing compound granular corpuscles, and crystals of hæmatin.

Neil Macneile, æt. 62, shoemaker, admitted to the Edinburgh Royal Infirmary, under the care of Dr W. T. Gairdner, on 12th March 1860.

Patient had enjoyed good health up to 2d March, ten days before admission, on which evening, at the hour of 10½ p.m., he was seized with a severe pain in his left temple, which soon spread all over his head. An hour later it was observed that he had lost the power of his right arm and leg: his left side also was affected in a minor degree, and he passed his water and stools in bed. He was quite conscious at this time, and complained of pain in his head and back. At 2 a.m. his speech was so much affected that what he said could not be made out.

On 6th March, *i.e.*, the fourth day of his illness, he had completely regained

the faculty of speech, and was recovering the power of the palsied side (the slighter affection of the left side soon passing off), and was able to keep his bowels and bladder under voluntary control.

On the 12th his progress was arrested by the supervention of comatose symptoms, and he was taken to the hospital. *State on admission.*—Patient seems to be in a deep sleep, from which, however, he can be roused so as to answer questions addressed specially and emphatically to himself. Respirations slow, but without stertor; countenance and surface very pale and cool; puffing of cheeks; pulse, small and irregular, about 90. Moves left arm about. Sees and can count correctly the number of objects held up to him. *Vespere.*—Tongue seems protruded to right side. When asked, is able to move his right arm up to his head, and can lay hold of a hand presented to him, though the grasp is feeble. Can pull up either leg, and sensibility in both is evinced satisfactorily on scratching them. Intelligence not abolished,—only in abeyance, requiring stimulation.

13th.—In much the same state. Pulse 72. On being roused, patient replies readily enough to simple questions, but relapses into somnolence the moment he is left alone, to be roused again by a new question, but only if put to him sharply, and in a loud tone of voice.

14th.—Does not now respond to stimuli of any kind. His moanings, which are very loud and distressing to his fellow-patients, are continued, with perhaps twenty successive respirations, and then they cease for a little—only, however, to be recommenced. He died during the night.

Post-mortem examination.—A large clot, of the size of a pigeon's egg, occupied the substance of the left lobe of the cerebellum, which was much softened around the clot. The clot had partially interposed itself between the cerebellum and the dura mater. The lateral ventricles were distended by three oz. of serous fluid. The clot consisted of two portions—a central, which rolled out easily, was of a deep jet colour, and the consistence of jelly, and which, under the microscope, consisted of an immense mass of blood globules; and a circumferential portion, which adhered to, or was incorporated with, the surrounding brain substance, was of a brownish colour, and under the microscope contained numerous compound granular corpuscles and pigment masses—black, brown, pink, and yellow. Some tetrahedral crystals of a pinkish colour were also seen.

The twofold character of the clot corresponds with and explains the main features of the case. It is plain from the history that this patient underwent two distinct apoplectic seizures—the first on 3d March, *twelve days* before death; the second on 12th March, *two days* before the fatal event. The clot, in the first instance, doubtless underwent, during the twelve days of the man's existence, partial absorption, and such transformation of its elements as yielded the pigment masses of various colours, and tetrahedral crystals of hæmatin. Its irritative influence upon the surrounding cerebellar substance was also indicated by the abundance of inflammatory or exudation globules, which were seen in the outermost zone of softened brain. The second and fatal hæmorrhage was composed entirely of blood globules, which appeared to have undergone no perceptible alteration in form or colour; it must, therefore, have been very recently effused.

CASE 3. Complicated with cerebral disease. *Summary.*—Dementia; impairment of co-ordinating power. Injury of the head six years before; convulsion fits, unrelieved by trephining; temporary motor and sensory paralysis of right side; Death. *Post-mortem.*—

Fungus cerebri. Purulent accumulation in sac of arachnoid. Immense hypertrophy of falx cerebri, and of all the membranes surrounding and enclosing the cerebellum. Old apopleptic clot or hyaline cyst in right corpus striatum.

James Matthews, *æt.* 44, a sailor, a patient under the care of Mr Fletcher, at the Workhouse Hospital, Liverpool, with signs of dementia of three months' duration, combined with slight paraplegic (?) symptoms.

Loss of memory, and chiefly of names, is the most important symptom. He is tolerably deaf, but can articulate in a slow, deliberate manner. He frequently raises his hand to his head, and pulls down his eyebrows, as if he suffered from pain in his head. He is very insecure on his legs and unsteady in his gait, and complains of a feeling of numbness in his feet. He appears to drag the foot partially when walking,—in fact, he has very much the "carry" of a flat-footed person; yet there is no real paralysis, for by a strong effort of the will, inspired by prompting, he can plant his foot firmly upon the ground. He received an injury to the right side of the skull near the vertex, six years ago, which has left a considerable hiatus in the outer table of the skull, to which the scalp is very firmly bound down, and which at first sight led to the opinion that there was a depressed portion of bone pressing upon the brain and causing the convulsions. Shortly after he first came under my notice he was seized with a general convulsion fit at the hour of 5 P.M. on 8th November, which passed off in an hour, leaving him in a quiescent state, insensible and moaning. Pulse 144; respirations 32; pupils natural; spasm of eyelids induced by efforts made to open them; cheeks puffing out with every breath; eyes directed to the left. Right arm and leg palsied, but limber; no response whatever to pricking or tickling the cutaneous surface, sensibility as well as motion being paralyzed. Muscles of left arm and leg firm; sensibility easily excited in the whole of the left side. At 8 P.M. the temporary paralysis of the right side had passed off, but the patient lay insensible and snoring.

The operation of trephining was performed over the depressed spot, but no depression of bone was found to exist, neither was there any osteophytic growth at the site; the depression being caused by an exfoliation of a portion of the outer table of the skull. The man was therefore not relieved by the operation; and, after lingering in an insensible state from twenty-four to thirty-six hours, he died.

Post-mortem examination revealed a considerable mass of the right cerebral hemisphere fungating, ready to slough, and exhaling a most intense pungent fetor. A quantity of laudable pus, amounting probably to two or three ounces, was found in the sac of the arachnoid. From the quantity and quality of the exudation when contrasted with the patient's low state—the shortness of the time since the operation, and the opposite state of the exposed brain (sloughing)—it had evidently been formed prior to the operation. The falx cerebri was much thickened, to the extent of not less than a quarter of an inch, and seemed to contain some firm nodules of fibrous matter in its substance. The falx cerebelli and the membranes above and below the organ were also very considerably thickened and opaque. In short, it was evident that there had been a slow and gradual growth or hypertrophy of these membranes, extending very probably over many months. A small cavity, large enough to lodge a filbert, and containing a clear fluid, was found in the substance of the right corpus striatum. It was probably the seat of a hyaline cyst. Its development was probably very slow and gradual, and it certainly was not accompanied by any special symptoms. The surface of this little ulcerated (?) spot was somewhat uneven, of a greyish aspect, and somewhat softer than the rest of the brain. Under the microscope numerous granular bodies resembling the exudation globules of Bennett were seen, and much plastic lymph upon the vessels.

The above is a complicated and important case. I desire, how-

ever, solely to fix attention upon those features in which it may bear comparison with the other cases of cerebellar disease.

The dementia is readily explained by the state of the greater falx. The occurrence of convulsion-fits shortly before death appears to have depended upon the development of purulent fluid in the sac of the arachnoid. The temporary motor and sensory paralysis of the right side, and the cyst-like cavity in the substance of the right corpus striatum are both enigmas to me. But I may state in one word that I consider that the hypertrophied condition of the membranes investing and enclosing the cerebellum, which must have caused pressure upon that organ, and the patient's altered gait and impaired mode of progression, were connected in the relation of cause and effect.

CASE 4. Disorganization of posterior cerebellar lobes in a case of chronic mania, with amaurosis, in which, for many days before death, the extraordinary symptom was observed in the patient of "suddenly and without apparent cause, bursting out into the most piercing cries and wailings," which closely resembled those uttered by the lower animals when their nervous ganglia have been injured by the knife of the experimental physiologist. The case is recorded by Dr Lindsay in his Annual Report of the Perth Royal Asylum for 1861. There were minor lesions affecting the cerebrum.

CASE 5. Abscess in substance of right lobe of cerebellum, in which loss of balancing or regulating power over the lower extremities was particularly observed. Other particulars of the case not known.

CASE 6. A living illustration of the main symptoms observed in the foregoing cases, and in which there are the strongest presumptive proofs of the existence of morbid growths in the posterior inferior occipital fossa. The patient was shown to the members of the Institution when the paper was read.

Summary of Symptoms.—Cephalalgia for ten months; single convulsion fit at commencement of illness; history of syphilis and of nodes on forehead and scalp; immense node in right temporal fossa; double facial palsy and paralysis of both auditory nerves; incessant and most piteous involuntary cries and wailings throughout the night. When asked why he kept on so, he said "I was not conscious of my moanings; it's more like a habit than anything else." Intelligence unimpaired throughout. Tottering or drunken gait. Vast relief and improvement under four weeks' treatment with Plummer's pill and hydriodate of potash.

Diagnosis.—Two or more tumours of syphilitic origin,—intracranial nodes, in short,—growing upon or behind the posterior surface of the petrous portion of both temporal bones, and from their contiguity to the hemisphere of the cerebellum, determining pressure upon that organ.

The following is an enumeration of the symptoms presented in cerebellar diseases in the order of their importance. The first three take the position of *leading symptoms*, and a concurrence of the first five might (in the writer's opinion) lead to a certain inference of disease in the cerebellum:—

1. The general integrity and clearness of the intellectual functions or their comparatively slight obscurity. In Abercromby's and Cruveilhier's cases, such statements as "intelligence perfect," "intelligence preserved," "intelligence perfect up to the last moment," are of constant occurrence.

2. Impairment of the co-ordinating, balancing, or regulating power necessary to combined action of the muscles. The individual becomes "top-heavy," turns round awkwardly, and frequently staggers or falls; in short, he presents the peculiar gait of a drunken man.

3. The periodic utterance of sudden, involuntary, automatic cries or screams, resembling those of the lower animals when the cerebellum or its peduncles is subjected to vivisection.

4. The pupils are invariably *dilated*, contrasting remarkably with their contracted state in diseases of the pons. (Dr W. T. Gairdner and Herman von Weber in *Med.-Chir. Trans.*, vol. xlv.)

5. The pain in disease of the cerebellum is felt either in the forehead, temples, or vertex, or it is general. It is rarely located to a spot in the occiput.

6. Deafness, whether partial or complete, appears invariably to depend upon involvement of one or both auditory nerves in the morbid growth. It is by no means a constant symptom.

7. The occurrence of convulsion fits and the symptoms of nausea and vomiting do not appear to be more frequently met with in cerebellar than in cerebral diseases.

8. The cutaneous sensibility of the general surface does not appear to have been either exalted or impaired in any of these cases.

9. Amaurosis and squinting are more frequently absent than present, and when met with depend upon specific disease affecting the nerves concerned.

10. These cases afford entirely negative evidence in regard to the supposed influence of the cerebellum over the sexual system as advanced by Dr Gall.



ARTICLE VI.—*On the Removal of Stumps, Decayed Teeth, etc.* By J. SMITH, M.D., F.R.C.S., Surgeon Dentist, Lecturer on Dental Surgery, Surgeons' Hall, etc.

THE aversion entertained by medical men towards tooth-extraction is more general than might be supposed, and sometimes entails serious consequences. For a medical attendant to examine, among other organs, the condition of his patient's teeth, is, it will be admitted, a somewhat exceptional proceeding, unless absolute local pain be present. This can scarcely be accounted for, except in one of two ways: either the effect produced on the general health

by dental disease is regarded as unworthy of consideration, or the removal and other treatment of stumps, decayed teeth, etc., is repulsive to, and consequently avoided by medical men. Be this as it may, however, the importance of such organs as the teeth, and the necessity of their functions being properly discharged, seem incontestable, when we consider their all but universal presence in the animal kingdom; their place in all the higher animals as the initiatory apparatus in the digestive economy; the change undergone by the whole system at the period of their first appearance during infancy, and the no less marked change accompanying their loss in old age; as well as the evil results, direct and indirect, which have again and again been traced to their disease or their destruction.

In the last number of this Journal it is inculcated [Dr Keiller on *Cancrum Oris*] that children dying from gangrenous stomatitis are in a great measure "poisoned by the deleterious gases arising from their own oral textures in a more or less complete state of putrefaction." But, while admitting the rapidly fatal effects producible by the severer and more rare affection, the same argument holds good, and effects of a similar nature are to be expected in any case where the inhalation and deglutition of similar poisons—if not equally abundant, at least equally offensive and more prolonged in their operation—go on, as in the case of various forms of dental disease. Any one who has had experience in diseases of the mouth will allow how frequently such cases occur as those, where almost every remaining tooth is loose, and seems embedded in a well of the most foetid pus, oozing out on the slightest pressure; where the gums, in presence of such teeth, are tumid, fungous, suppurating, and so tender as of course to preclude any approach to mastication; where the carious dental tissues have assumed that peculiar cheesy condition so often met with, crumbling down on the merest touch, the more superficial layers of decay being literally cleaned off by, and swallowed along with, each mouthful of food; and under such circumstances is impunity from the constant presence of these noxious matters to be expected? We know how very small a quantity of many substances inhaled or swallowed is sufficient to produce a powerful effect on the system; we know the changes produced on organic bodies by the introduction of matters undergoing putrefaction; and in the case under notice the amount of dead animal matter in a state of active decomposition arising even from a single decayed tooth, we know to be by no means inappreciable, while its presence is constant, contaminating every morsel swallowed and every inhalation made. We know, too, that various affections, digestive disorders, urticaria in many cases, and not facial neuralgia alone, but even sciatica, might be cited as disappearing along with the removal of such teeth. And, lastly, there is one question which, although perhaps somewhat more conjectural or hypothetical, is yet interesting and important as connected with the subject, and

which claims some attention, namely, how far dental caries may be contagious. The suggestion may appear somewhat untenable, but there is no reason to deny that dental caries is only a local manifestation of a constitutional disease. We cannot produce dental caries in any tooth at will. We cannot, on the other hand, prevent its attack by any known topical means, any more than we can explain its selecting one tooth more than another in those sudden accessions it is sometimes observed to make. And if other maladies, manifesting themselves in local symptoms, are capable of reproduction through the agency of matters emanating from lesions distinctive of these diseases, it appears quite possible that dental caries may possess etiological characters of a similar nature.

All such considerations point to the removal of a cause in all probability so evil in its consequences, so productive of injurious results,—a cause, too, apparently so easy of removal, and yet so greatly overlooked in general practice.

The error, however, appears to lie not so much in these matters being called in question, as in their being neglected. The affections, both local and constitutional, resulting from dental disease are well known, and in most cases their importance is conceded by practitioners. But, apart from the instance of mere toothache, there is perhaps only one affection in which any practical effect is given to such concession, and that is where abscess has opened externally on the cheek or neighbouring parts, and where removal of the offending tooth is held as essential towards closure of the sinus existing. Here removal of the diseased or misplaced tooth causing the disorder is generally insisted on. But in nearly all other cases the evil results arising from dental disease are admitted, and no more, such admission being almost universally set at naught in practice; mouths being complacently left not only unfit for anything like mastication, but exhibiting on a small scale all stages of inflammation, suppuration, ulceration, and gangrene. Very many instances exist, it may be said, where this state of matters seems to lead to no bad effects in particular. But the probability of a contrary result seems, *à priori*, so strong, that it is scarcely justifiable to allow them to pass unheeded.

Now, one reason of this neglect, or perhaps aversion to interference in such cases, is that it is sometimes looked upon as a difficult matter to remove stumps and decayed teeth; but this is by no means the case, nor is it by any means so painful for the patient to have stumps extracted as is commonly supposed.

Sufficient time has now elapsed for testing the merits of several methods not long ago revived or projected, as capable of rendering tooth-extraction painless, without the induction of general anæsthesia. These measures have been found in some cases to be by no means generally applicable, in others altogether impracticable, and in not a few, to have had nothing to support them except misre-

presentation and credulity. The consideration of local anæsthetics may therefore be set aside.

Where general anæsthetics have, on the other hand, been employed, absolute immunity from pain during tooth-extraction can, no doubt, be procured; in some instances, however, their employment has been found to complicate the operation, and frequently to occasion failure; because where a tooth is much decayed, or difficult to be seen, or almost inaccessible, as is sometimes the case even with a patient giving all the aid he can, the difficulty to the operator becomes greater where there are superadded the contingencies and utter helplessness of general anæsthesia.¹

Where no anæsthetics, again, are employed, the operation, as has been said, seems one repugnant to the feelings of most medical men, and regarded, perhaps justly, as harsh, excessively painful, and somewhat rude in principle. In this way, it becomes repulsive not only to patients but practitioners; and any remarks which from time to time appear on such a subject may be the more admissible when they refer to those points which, without the aid of extraneous means, may render this little operation easier or simpler.

Stumps are almost always loose, and their removal is similar to, and effected in much the same manner as the removal of a splinter of wood from the finger,—the difficulty in both cases being to get hold of the foreign body at a sufficiently solid part, so that it shall not crush under the instrument. On this account stumps are best removed either by a pair of forceps, the points of which are long, slender, and very sharp at the free extremity of the blades, so that they can be easily inserted upon and pushed down along the sides of the stump; or by means of an elevator, having a short spoon-shaped point about one-third of an inch long, and bent at right angles, with the handle or shaft so as to enable the stump to be turned or rather lifted out by it. These elevators, right and left, being a common pattern, are to be had at every surgical-instrument maker's, and are more easily used than any others. The point is to be driven firmly down either in front of or behind the stump, supposing it to be a molar,—not at its sides if possible, as no proper fulcrum can be there obtained,—and by rotating the handle the root is extruded from its socket.

The removal of a tolerably firm tooth requires somewhat greater care to do it with expedition and the minimum amount of pain; and here it must be borne in mind, that in as great a measure as the forceps supersede the key in rendering extraction less painful, so will any means be an improvement again upon the application of the forceps which shall enable us with less force to remove the tooth in the direction of its long axis, or rather to follow the direc-

¹ Where chloroform is exhibited, considerable difficulty sometimes arises in opening the patient's mouth. This, however, can be easily overcome without using any artificial means, by throwing back the head on anæsthesia being complete, when the jaws will at once be separated.

tion taken by the socket or sockets in which it is implanted. Towards obtaining this end, a slight circumstance in the conformation of the teeth seems to have been somewhat overlooked; and of this circumstance an upper molar tooth will best serve for illustration.

On examining almost any well-developed upper molar, free from abnormal twisting or confluence of the fangs, it will be found that not only do these fangs present a mere general divergence from each other, but that they assume a specific direction. If an upper



Upper Left Molar
Tooth.

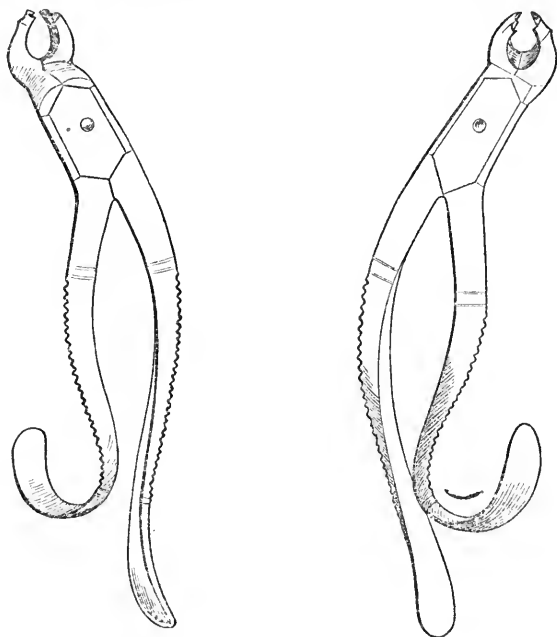
molar tooth be held with the two external fangs next the observer, it will be seen that, in relation to the tooth, they incline *backwards*, and on looking beyond them the internal fang will appear to incline rather *forwards* than otherwise. This being the case, extraction cannot well be effected by a force applied exclusively in any one direction, but requires the application of such force to follow the course indicated in the conformation of the fangs. In order to remove such a tooth with facility, the *external* fangs must be drawn not only downwards, but at the same time *forwards*; while the *internal* fang must be drawn downwards and *backwards*. The only way to accomplish these movements simultaneously is of necessity by making the tooth during extraction describe a slightly spiral movement, making it follow part of the turns of a screw, of which the fangs may be considered to represent the threads. In this manner the directions on either side of the head respectively in which the tooth is to be turned would be forwards and inwards at the same time that it is pulled downwards: in other words, the external side of such molar tooth would be turned slightly forwards while making the downward pull.

Generally speaking, a similar principle of construction seems to be exhibited by the other teeth, although less marked and more frequently modified than in the upper molars. I believe, however, that in this case also the sockets and fangs will be found to partake, however slightly, of the nature of a screwed tap and die,—not, however, as applying to their fangs collectively where more than one exists, but exhibited by each one individually. While, however, I should hesitate to advance any particular *tour de main* as thus indicated for their removal, I have found some advantage in close attention being directed, during this operation, to any sensation conveyed to the hand of a tendency on the part of a tooth to make a slight turn during its detachment or its emergence from the socket, and the expedience of extracting it in that direction.

In connexion with this subject, a single remark may be made regarding the construction of tooth-forceps. The beaks or blades of the more modern forms of these instruments are almost all that could be desired; but the handles would admit of being much better adapted to the natural grasp of the hand in those very different positions it has to assume according to the tooth to be extracted, and the situation in which the operator can most conveniently stand

beside the patient. In this manner, there would be not only much greater facility afforded in operating, but a very considerable amount of suffering to the patient would be avoided.

To expect one pair of forceps to answer for the extraction of every tooth is, it is needless to say, absurd. One pair may be made use of, but only on the same principle that a painting might possibly be painted throughout with one brush. Several qualities among others are essential for perfection in any tooth-forceps: first, they ought to lie clear of the teeth in the opposite jaw; they ought to be accommodated to the natural position assumed by the hand; and they ought to afford the greatest amount of force without entailing irregular or increased pressure in their grasp of the tooth; and it will be seen that pressure in grasping the tooth can only be well regulated where the hand is prevented from slipping along the handles when



Left.

Right.

employing extra force. Two forms of instrument are appended in the accompanying diagram illustrative of these points; the forceps shown being those adapted for the upper molar of the right and left sides.

Of course, in a matter of this kind, where so much depends on practice and opinion, what is here suggested applies only to general principles; any particulars of form and construction may best be left to individual judgment and discrimination. There is no doubt, however, that, by a little more attention to the construction of instruments, and where and how to use them, tooth-extraction would become less formidable in every way.

Part Second.

REVIEWS.

Public Health in relation to Air and Water. By W. T. GAIRDNER, M.D., etc. Edinburgh: Edmonston & Douglas: Pp. 378: 1862.

IN all communities there must ever be certain individuals who are unable to help themselves. Some of these are wholly and others partially dependent; and we believe the provision made for them might be taken as a not unerring test of the extent to which civilisation has spread in any nation. Thus, state interference on behalf of the poor and the lunatic, the factory child, or the coal-miner,—help, in short, extended by the community to those who are unable to help themselves,—has become a recognised duty on the part of government.

Our profession are familiar with the maxim,—“*Sublatâ causâ tollitur effectus* ;” it seems, however, to be new in legislation; and while for centuries we did what we could to punish crime and keep down pauperism, we never seem to have thought of discovering and endeavouring to remove the causes which induced them. “Indeed,” as the Commissioners for inquiring into the State of Large Towns observe, in their Second Report, “until the publication of the Reports made to the Poor Law Commissioners in 1839 upon the Condition of the Poorer Classes of Her Majesty’s Subjects in certain Parts of the Metropolis, followed by the Report of a Select Committee of the House of Commons in the year 1840 on the Health of Large Towns, etc., the extensive injury to the public health now proved to arise from causes capable of removal appears to have escaped general observation, while the means of remedying the evils, by improvements in drainage, or by other structural arrangements as have been carried into operation, have been executed more with a view to the appearance of the town or the comfort of a portion of the inhabitants, than directed to maintain the health of the whole community.” The great service rendered by Mr Chadwick and his colleagues has been the active and judicious collection and diffusion of information on matters relating to the public health.

In his Historical Sketch of the Origin of Sanitary Science, we are disposed to think Dr Gairdner has scarcely done justice to his own profession. Many enlightened physicians were well aware that a violation of nature’s laws was the chief cause of some of the most fearful diseases which periodically visited this country; and others had, like an eminent Scottish agriculturist (Mr Smith of

Deanston, in 1798), turned their attention to "convert the mass of nuisance by the powers of vegetation from poison to wholesome articles of food" (see American Medical Repository, paper by Dr Mitchell, 1798); while Dr Patterson of Londonderry and Dr Miller of New York directed attention to the same subject; and later still, private speculation had shown in the neighbourhood of Edinburgh what could be done in this way,—with more advantage, however, to the pecuniary interests of the speculators, than of the sanitary ones of the inhabitants generally.

The results of the various inquiries instituted by Royal or Parliamentary Commissions have never been brought before the public in a popular form, if we except the very able manual—"Sanitary Economy, its Principles and Practice," published by the Messrs Chambers in 1840, and which was, we believe, the composition of an eminent historian.

This is the task which Dr W. T. Gairdner has undertaken in the work before us, which he proposes in the following words:—

"*First*, and chiefly, to convey some of the elementary principles of modern sanitary science to those to whom I have taught the science and art of healing; to complete, as I think it ought to be completed, the cycle of sciences on which that art of healing rests.

"*Secondly*, to establish, if I can, a cordial understanding between the medical profession and the public in this matter of Public Health; to claim for the noble, open-minded, and generous profession to which I am proud to belong, the rightful influence that springs from its natural position in relation to sanitary matters; an influence which I am sure will always be willingly accorded to it wherever the true conditions of public health are rightly understood."—Page 1.

It is perhaps to be regretted that the public has hitherto had for its teachers, not only men who are not physicians, but men who sneer somewhat at the duties of a physician; and we did hope that when a medical man, in every way so well qualified for the task as Dr Gairdner, undertook to instruct us in public health, he would have shown, by example, the superior knowledge which an educated physician as distinguished from an educated layman could bring to bear on the task.

The fact is, as Dr Gairdner hints, medical men as a body have fallen behind in this matter, and it well behoves them to take care lest, as they have allowed the best papers on physiology of modern times (alas! that they should be denounced as disgusting) to be written by a non-professional author, they should also allow this branch of their science rather to be managed by the Social Science Statesman than by the Social Science Physician. The publication of this manual is therefore in every way opportune, although we cannot help regretting that the fact of the greater part of it having been delivered in a course of popular lectures prevents it from presenting the aspect of a true scientific treatise such as we know Dr Gairdner to be capable of writing.

The work is divided into six chapters, to each of which are

appended copious notes, which often, like the postscript of a lady's letter, contain the most important matter.

In the first, headed "Introductory," we are presented with a synopsis of the subject, containing much interesting matter.

Commencing with the sanitary provisions of the Mosaic law, and referring to those in the code of Lycurgus and of the Romans, the author shows how the darkness of the Middle Ages beclouded this science also, and how the filthy and immoral monks did nothing to encourage cleanliness, but the reverse, and how, when the habits of the age issued in their natural consequence, epidemic disease, like some Pharisees of modern times, "they betook themselves to prayers, masses, and works of charity," instead of using the natural means which our all-provident Creator had provided. If any one doubts the dissolute and depraved state of the Church in Scotland during the sixteenth century, we would recommend him to read the interesting brochure published the other day by Professor Simpson, "Antiquarian Notes on Syphilis in Scotland," and especially the edict of the Synod of Edinburgh, 1558, printed at page 39 of that work.

The natural result of the state of matters then prevailing was that the country was ever and anon visited by one of those fearful epidemic diseases, which are well styled by Dr Gairdner, "God's lessons; or practical expositions on a great and startling scale of facts and laws which might otherwise elude our observation, but which are equally active in our every-day life."—Page 28.

The commencement of the real work of sanitary reform is traced to the advent of cholera in 1832, which first directed the public mind to the necessity of repressing as well as of treating pestilence.

Dr Gairdner next refers to the labours of Dr Farr, in the department of Vital Statistics, on whose pre-eminent merit he bestows the following just tribute of admiration:—

"Dr William Farr has done for the vital statistics of England almost what Harvey did for physiology or Lavoisier for chemistry. He found the facts of this science in a state of almost hopeless and aimless confusion. He has not only added immensely to the number and value of these facts, but has brought into them light, harmony, order, and, for the first time in the history of the science, a determinate method and an approach to scientific exactness. On the basis of millions of separate details, arranged, on the whole, in a very close and accurate accordance with medical opinion, and with the demands of sanitary science, it has been the great and enduring merit of Dr Farr (originally a modest country practitioner and licentiate of the Company of Apothecaries) to build up a body of doctrine on vital statistics, not only unequalled but unapproached in any other country. By the systematic calculation of death rates he has placed an easy and useful method at the service of all inquirers into the public health,—a method certainly not without risk of error in its application, but giving facilities for the elucidation of truth, and the correction of error, which render it of the utmost value to medical science. By the formation of life tables from these data, Dr Farr has also immensely aided the operations of life-insurance; and, by the vast extent of his general information, the vigour of his literary style, and the genial current of his human sympathies, he has been able to invest his dry and abstract inquiries with not a little even of a

popular, almost of a poetic, interest. Those who have occupied themselves much with the reports of the Registrar-General, or with the most instructive and interesting historical dissertations in the Report on the Census of 1861, will assuredly join me in giving to Dr Farr the credit of having at last solved the problem of investing large numbers with a correspondingly real interest, and made blue-books, and big ones too, among the most stimulating and suggestive productions of the age."—Pages 13 and 19.

The death rate affords Dr Gairdner a starting point for the commencement of his studies, he regards it as "the barometer of public health," explains its variations, and shows with what limitations it is to be regarded as an index of the healthiness or the reverse of any district.

He further shows how, by its means, to quote his own words,—

"Modern sanitary science has passed out of the stage of the hypothetical, and become a strictly inductive, and closely reasoned branch of knowledge, resting upon a solid basis of experience. It is no longer a mere dogmatic assertion of the general laws of physiology, or a groping in the dark after the laws of epidemic disease, but a careful investigation of the exact conditions under which such disease arises."—Page 26.

This introductory chapter concludes by showing how air and water contaminated with the effete products of the human body, or with organic matter in a state of decomposition, are to be regarded "as the true factors of almost all epidemic diseases, and of a great number of chronic diseases also."

The following passage contains the germ of the true philosophy of sanitary science viewed in the right spirit, by one who professes to be the servant and interpreter of nature,—

"All nature, considered with reference to air and water, is a perpetual ebb and flow of oxygen, nitrogen, hydrogen, and carbonic acid; or rather a cycle of restless changes so complete and constant as to have no general ebb and flow. Meteorology and hydrology are but the record of a marvellous series of provisions against stagnation; physiology is an immense laboratory of chemical reactions commensurate with all the forms of vital activity. Consider now that the very essence of what we call life in our bodies consists in perpetual change, perpetual waste, perpetual motion of atoms; and you can hardly fail to see in all this the purpose and foresight of the Creator."—Page 27.

The second chapter, on Air and Water as sanitary agents, has deeply interested, while it has, we must confess, disappointed us. The subject, of course, lies at the root of all sanitary reform, and we were entitled to expect at the hands of Dr Gairdner, a physician so able and accomplished, that it should receive some more scientific treatment than it has done, and some illustrations less well known than the numerous extracts from the Parliamentary reports which furnish its staple contents.

Chapter IV. is entitled "Scanty Water," which gives, however, a very inadequate idea of its contents, which are multifarious and interesting. Dr Gairdner commences the discussion of this branch of his subject as follows:—

"Water differs in this respect from air, as a matter of fact, I mean, for I am not speaking of what *ought to be*, but of what *is*;—water differs in this respect

from air, that in some places it has become a *commodity*—it is made an article of *sale* and *barter*—it has a *value* and a *price*. I have already maintained, with respect to the air we breathe, that whatever God gives us freely and at large, so that we cannot confine the use of it to ourselves alone, we cannot justly make our own without due regard to the rights of others; and I apprehend the application of this same principle ought to limit the absolute right of personal property as respects water. I hold, therefore, that the moment water becomes a *commodity*—an article having a commercial *value* in the ordinary sense of the term—you have reasonable grounds for suspecting that the community has culpably and negligently abandoned its rights, to the great danger, if not actual detriment of the public interest. I hope to convince you thoroughly of this before I have done, and also to show you, that the rights of the community in this matter are absolutely indefeasible—they cannot be abandoned without great injury and suffering; and therefore they must be maintained inviolate to this extent, that no one shall claim exclusive access to the sources of supply of this necessary of life any more than in the case of air, which we have already discussed.”—Pages 150, 151.

But the fact, though not absolutely overlooked, is, to a great extent, ignored, that though the water supply may be sufficient for the rural hamlet, originally founded to be near it, it may prove altogether inadequate for that hamlet when it has from circumstances become a village or town. Water must then be brought from a distance by means of expensive works, and the original outlay on and cost of maintenance of these must be defrayed either by making water a “commodity—an article of sale and barter,” to which Dr Gairdner so strongly objects, or by what strikes us as something not very different—a water rate. In point of fact it does not matter whether this rate be paid by landlord or tenant, as in either case it falls on the latter, either directly, or in the form of increased rent, rendered necessary by the increased capital sunk; but still the fact remains the same, that except in rare instances, or from the result of private benevolence, water in our houses can never be anything else than “a commodity—an article of sale and barter, having a value and a price.”

We may not “confine the use of it to ourselves alone;” but whenever we extend that use to others, we expect to be reimbursed at least for our outlay in doing so, and you may as well call on the butcher or the baker to supply their commodities, so essential to life, without money and without price, as expect that this should be done either by companies originated by private enterprise or by local authorities acting for the public generally.

Water and air cannot in this respect be placed, as Dr Gairdner endeavours to place them, in the same category; the universal diffusion of the one is very different from the limited supply of the other; the one will itself enter alike our garrets and our cellars if the means of admission be but afforded, the other must be brought to and forced in by expensive mechanical means. We have not yet lived to see water taxed as a luxury as air and light once were; but as it cannot be obtained without cost, it were a violation of the first principles of political economy to contend that it has no “money value,” and should be disposed of without “price.” We do

not advocate "Water Companies," far from it; but, taking our Edinburgh one as a type, we do not think it can be said that the percentage which its shareholders receive is an extravagant return for their outlay and risk; and it must never be forgotten that, as Lord Cockburn (quoted by Dr Gairdner) shows, but for private exertion we might still have been dependent on the "*water-caddies*," or on "a wretched tank of about ten or twelve shallow acres on the north side of the Pentland Hills, which had been considered as far too small when it was made a long time before, but had now [1817] become absurd, even if it had been always full, instead of being often and long nearly empty. The Town Council, on which our supply of this necessary of life depended, could or would do nothing. A joint-stock company was formed, and a plan for bringing in the Crawley spring from the south side of the Pentlands was obtained. The danger of leaving a city at the mercy, for anything it cannot do without, of a single private company was foreseen, and has to a great extent been realized. But anything was thought better than the Town Council; in so much, that so long as the absolute exclusion of our civic rulers was doubtful, scarcely any one would risk a shilling in the concern. But they being excluded, the company proceeded, and we occasionally got some water."—*Memorials*, p. 352.

A popular fallacy is very prevalent, that drainage is the great work of the Sanitary Reformers; but it cannot be too much urged, that drains without an adequate water supply are in themselves nuisances, retaining, instead of removing, the sewage.

Chapter V., "Impure Water," is a valuable chapter, and will startle many of those whose attention has not previously been directed to the subject, by showing how, in many cases, the origin of disease may be distinctly traced to the conveyance of excreta from the bodies of the sick to the bodies of the healthy through the water they drink, just as in another class of cases the same is done through the medium of the air.

We wish Dr Gairdner had referred to the recent reports by Dr Letheby, the able medical officer of health to the city of London, in which the frightful state of impurity of the drinking water of the metropolis is exposed. Thames water has long been notorious as the essence of all that could be abominable in a fluid; and yet, if the analyses of Dr Letheby are to be depended on, the so-called springs of the city are more polluted still. Those most prized for their refreshing and sparkling properties are found to derive these dangerous fascinations from organic decay; and the large quantities of common salt which they contain clearly points to the presence of the filthiest contaminations from sewers and cess-pools. Many of the pumps are in close proximity to the fat grave-yards of the city; and it is more than probable that all derive a portion of their waters from these sources, for they are the principal gathering grounds for the surface springs; in fact, they are the only open spaces through which the rain can percolate to reach the shallow wells.

In this chapter, Dr Gairdner ably vindicates the doctrine of contagion from the doubt cast upon it by the late Board of Health. These peculiarities of opinion were, in fact, the causes of the strong feeling excited against the Board, which ultimately issued in its downfall. Most medical readers who have exercised their powers of observation, as well as most philosophers who have attended to the facts, and whose minds are not preoccupied by an *idolon specus*, will admit their belief in the doctrine of contagion as defined by Dr Gairdner.

"By *contagion*, of course, you will understand me to mean that attribute of a disease by which it is communicated from the sick to the healthy; it may be by direct contact, or it may be through the air, or the water, or some other channel. There is a poison, or other morbid influence, formed in connexion with the bodies of the sick, and transferred through their excretions or exhalations to the bodies of the healthy, so as to generate the disease."—Page 209.

The sixth and concluding chapter of the work deals with the important questions of "Drainage and Sewerage."

In this chapter, the haphazard system of general drainage formerly adopted, as well as the faulty construction of the earlier drains, are pointed out. There is no doubt that in many cases the old-fashioned drain was a means of detaining the accumulated refuse until decomposition took place, and that the house-sewers connected with these reeking abominations were only "poison conductors" as Dr Gairdner terms them; and if we had nothing more to be grateful for to Mr Chadwick and his coadjutors, the introduction of tubular drains, and the due ventilation of sewers, would be a sufficient claim on our regard.

The all-important matter of the disposal of the refuse of our towns, which is at present the great sanitary problem, is left by Dr Gairdner to the solution of the agriculturist. We confess this abandonment of the vantage-ground claimed for the medical profession has disappointed us; and we know no question on which the profession are better entitled to be listened to than on this. There is no place where the subject can be better studied practically than in Edinburgh, the drainage of which flows either into what, during a great part of the year, is little better than the channel of a dried-up river, or is diffused by irrigation over the surface of the meadows by which the city is now nearly surrounded. Twenty years ago, in the prospect of an important lawsuit, the opinion of the profession was much divided on the salubrity or insalubrity of such arrangements; and we should have liked to have seen it fully discussed by Dr Gairdner in the absence of all forensic influences, and by the light which has been derived from extended experience.

The use of carbolic acid is not even alluded to, and the plans of Mr M'Dougall for disinfecting sewage are not mentioned. This subject has acquired additional interest very recently by the discussions in connexion with St Thomas's, Exeter, where an expenditure of £1200, for conveying the sewage away from a place

where it had been declared a nuisance, was saved by the use of one gallon of carbolic acid, price 11d., per diem,—the value of the sewage as a manure not being at all lessened.

Much of the valuable matter of this volume is contained in the copious notes with which each chapter is followed; and we would especially press on the attention of medical men the one on "Sanitary organization."

While we write, much is being done in Scotland in the right direction. Aberdeen and Glasgow are now before Parliament with local police and sanitary bills far superior to any that have preceded them, while Government have introduced a General Police and Sanitary Bill for all Scotland. The capital alone remains unmoved; and though earnest men have been drawing the attention of our municipal authorities to the state of Edinburgh, little real interest has been evinced by these bodies, and talking has as usual taken the place of acting.

But let us not be too nice as to the measures proposed; let us support anything that is good in them, trusting that, as their value is perceived, and knowledge on these subjects extends, wider and more stringent provisions will be introduced, and that gradually our men of handicraft and hard labour will be protected as they ought to be from unnecessary disease and death.

No part of Dr Gairdner's volume has pleased us more than that in which he contends for the appointment of officers of health; and we especially rejoice in that idea of his which regards them as missionaries of health sent forth to preach the doctrine that prevention is better than cure.

The primary and chief sufferers from the violation of sanitary laws are undoubtedly the working classes, though the effect of their transgressions spreads through all ranks and grades of society. They, too, are unable either to recognise the errors they commit, or to seek for themselves emancipation from them. An "aggressive agency," as Dr Gairdner, borrowing from Chalmers, styles it, must be brought to bear upon them, and this is one great function of the noble profession to which we belong.

We cordially recommend this work of Dr Gairdner's; we feel sure it will see many editions, and we hope that, by additions and corrections, the next one will be much improved—excellent in many respects as the one before us is.

The Ambulance Surgeon; or Practical Observations on Gunshot Wounds. By P. L. APPIA, M.D. Edited by T. W. NUNN and A. M. EDWARDS, F.R.S.E. Edinburgh: A. & C. Black: 1862.

IN this compact volume of two hundred and sixty-six pages we meet with a valuable store of information, such as can alone be afforded by men of considerable experience, and whose knowledge is obtained amidst scenes of carnage and the repulsive features of

the battle-field. War, however desolating in its results and degrading in its moral influence, is not without some practical benefit even to those who take no active part in it. The experience gained by the military surgeon in his wholesale dealing with the wounded is, by such works as the one now before us, made available to the civil surgeon in the treatment of the fewer casualties of the kind which fall within his reach. Gunshot wounds do not enter largely into the practice of ordinary surgeons; but there are many injuries, caused by other agents than the missiles of war, the careful treatment of which implies a knowledge of the practical means suggested in works like the present. Casualties of the gunshot order are, however, more imminent in the present day of universal volunteering.

To the Parisian street warfare of 1848, the Italian Campaign, and the Crimean War, M. Appia owes his experience in chief; and in relating it for the advantage of others, he compares it with that of eminent surgeons of different periods.

The book is divided into three parts: the first of which treats of gunshot wounds generally; the second, of wounds in different parts of the body; and the third, of surgical appliances, from the pen of one of the translators, Mr Edwards. In a work so full of practical detail it is impossible, in a limited space, to lay before the reader any portion of it by which he may judge of the utility of the whole.

To surgeons in the public services it must prove a real boon, and to general practitioners it will afford a ready insight into the most approved methods of treatment adopted by men of singular ability, whose opportunities for applying the various means at their disposal have been far more numerous than the civil surgeon can hope to enjoy. At the same time, the practice of older surgeons is by no means ignored, for we find the question of dilatation of the wound, primary and secondary amputations, the application of heat and cold, field dressings, hospital dressings and such like, amply discussed.

We are much indebted to Mr Nunn and Mr Edwards for their careful translation of the book, and for the judicious manner in which the somewhat difficult editorial task has been accomplished. The chapter on disinfectants is a valuable addition to the work; whilst the numerous illustrative woodcuts, and a copious index, render it attractive, easy of consultation, and very valuable. The editors' views, in submitting a translation of M. Appia's work to the profession in this country, may be gathered from their laconic and characteristic preface:—

“In offering this edition of Dr Appia's ‘Ambulance Surgeon’ to the profession, the editors have only to state that the translation is slightly condensed, and that a few details to be found elsewhere have been omitted.

“They have added a chapter upon disinfectants. It was originally intended to add a series of illustrations of surgical appliances. But being unwilling to make the book larger than absolutely necessary, they have for the present limited the last part to the dressing of wounds, hæmorrhage, and some of the more common varieties of fracture.”

Klinische Mittheilungen aus dem Gebiete der Gynaccologie. Von Dr CARL MAYER, Geheimer Sanitäts-Rath in Berlin. I. Heft: 1861. [Clinical Communications on the Diseases of Women. By Dr CARL MAYER, etc.]

DR CARL MAYER is well known to the profession as a practitioner in the diseases of women, enjoying a very large and fashionable business, and aspiring to be a great contributor to the practical resources of the medical art. We have generally, therefore, paid attention to his writings, and have carefully perused the present imposing first number, in large quarto, of a promised series of clinical contributions, of which he has commenced the publication, and to which he prefixes the usual twaddle about urgent requests, to commit his writings to the press, from friends and colleagues. This first part is devoted to the subject of erosions, excoriations, and ulcerations of the mucous membrane of the cervical canal, and of the lips of the os uteri.

Extensive and fashionable practice is by no means a very trustworthy indication of extensive knowledge or successful treatment. Dr Mayer tells us of the extent and prosperity of his practice; and we are sure that any one with boldness and perseverance in his avowed plans will soon get a large practice if he has it not already. Dr Mayer seems to be now enjoying the unenviable distinction which some physicians in this country had several years ago, which none fortunately dare to seek now, and which gained for them the facetious name of "speculators" after their favourite instrument. He gives a horrible, we might say a heartrending, description of the fearful results of uterine catarrh and so-called ulceration, and blames the neglect of practitioners to examine, a blame which he most carefully extends to the management of those cases wherein, all bad symptoms having disappeared without local treatment, he declares the cure to be only deceitful, and a source of dangerous confidence. Further, he expresses his conviction that, in at least eight out of every ten cases of hysteria, the various nervous lesions depend on some kind of uterine catarrh, and he assures his professional brethren that in no case of nervous disease in the female sex will he commence treatment till he has himself made a careful vaginal exploration. A few of these nervous lesions he enumerates in another place, mentioning nervous headaches, hysterical suffocations, affections of the heart, neuralgias of all sorts, the most various spasms, hyperæsthesias, anæsthesias, paralyses of the lower extremities. Before we advance to a few words on the better part of this publication, we need scarcely say that we blush for Dr Mayer and his followers in all countries, and we feel sure that, however large their practices may be, they do not enjoy the confidence of any of their professional brethren endowed with even a little common sense.

The body of Dr Mayer's work may be considered interesting as an exhibition of his peculiar views and methods of treatment. While it is, upon the whole, made up of careful observation and sound teaching, it contains very little that is novel or striking. He dislikes cold injections and cold sitz-baths, and recommends them tepid. He has great faith in local abstraction of blood as a preliminary measure, when there is congestion of the uterus, and thinks the days just preceding menstruation the most convenient period for applying leeches to this organ. He thinks the number of leeches should not exceed four. Scarifications he resorts to when the hyperæmia is purely local, and confined to the lips and canal of the cervix. To regulate the bowels he uses *magnesia usta*, finding that salines cannot safely be often repeated. He has special antipathy to aloëtic purges, and to the "beloved" pills compounded with extract of rhubarb, which he finds patients of all countries in the habit of using.

The actual cautery Dr M. applies to fungous excrescences of the lips of the os and of the cervical canal, and he uses it to stanch bleeding after amputation of the vaginal portion and of neoplasms. Caustic potass he uses only when the patient has an insufferable dread of the hot iron; he finds that it often produces considerable inflammation, and that the ulceration following its use is difficult to heal up. In less serious cases he uses nitrate of silver, aluminated copper, solution of sulphate of zinc and alum, etc., etc.

Here is a shift for sterility and dysmenorrhœa declared to be successful in cases where "renowned physicians" had completely failed. Take up in a pipette a teaspoonful of a solution of sulphate of atropine in water of the strength of two grains in an ounce, squirt it into the cervix uteri; then, after a short pause, you find you can pass the uterine bougie into the uterine cavity without any of the extreme pain it caused before using the atropine. This operation requires to be frequently repeated for a long period, and the bougie should, on each succeeding occasion, be left a longer and longer time. At length the sensibility of the passage and the dysmenorrhœa are declared to be cured.

Vaginal injections of well-diluted toilet vinegar of some kind are a favourite prescription. Blisters applied over the sacrum are also said to be of much avail in various circumstances.

The first affection of the cervix which Dr Mayer describes, consists of protuberances and erosions of the mucous membrane of the cervical canal, arising in consequence of chronic endometritis, or chronic inflammation of the cervical canal, and which extend around the external os. This is often seen in maidens and young married women, and is in the latter said to be often a cause of sterility. This disease is described as leading to a great variety of symptoms, and is said to have intimate relations in many cases with uterine versions and flexions, and with diseases of menstruation. The continuance of flexion Dr M. thinks quite inconsistent with the

cure of the endometritis or of the sterility. (In this he is utterly wrong; we remind the reader that we are, for the most part, merely stating summarily some of the author's views.) He devotes a page to show that intrauterine pessaries, as used for versions and flexions, and allowed to remain in utero, are dangerous instruments, and to recommend in their place the use of different sounds, which he never allows to remain long in the uterus, and whose action he assists by vaginal pessaries of charpie or of india-rubber, etc., etc.

The second affection of the cervix which our author describes is follicular excoriation and ulceration of the cervical canal, nearly always accompanied, he says, with severe chronic metritis. Under this head we have mention made of a series of most remarkable cures effected by Mayer, after many other physicians had entirely failed, by simply pulling off the cervix, a minute pediculated follicle, and touching the raw with nitrate of silver!

The third affection of the uterine cervix which is described, is papillary erosion and excoriation. Under this head he discusses the cauliflower excrescence, and mentions Virchow's demonstrations of its papillary origin. He divides such growths into malignant and non-malignant, but can give no means of diagnosing to which of the classes any purely papillary growth belongs. He finds the application of pyroligneous acid the best means of arresting the bleeding from their surfaces. He mentions the natural progress of papillary growths to become cancrroid, and then truly cancerous. Lastly, he describes the amputation of the cervix in these cases, and expresses a decided preference for the curved scissors of Von Siebold to the ecraseur and galvano-caustic, and gives reasons for his preference, which appear satisfactory.

At the end of the essay he goes quite out of his way to say a few words in support of Scanzoni's views regarding the anatomy of prolapsus uteri, and especially the view of Huguier, that this condition is generally the result of hypertrophy of the supervaginal portion of the cervix.

Part Third.

PERISCOPE.

QUARTERLY REPORT ON PHYSIOLOGY.

BY W. GILCHRIST, M.D., TORQUAY.

THE NERVOUS SYSTEM.

RESEARCHES ON THE FUNCTIONS OF THE BRAIN. BY R. WAGNER.

WITH NOTES BY BROWN-SÉQUARD.

IN these reseaches two methods of inquiry have been adopted: 1st, The observation of persons who have sustained accidental lesions of the brain, or suffered from organic disease of that organ. 2d, Vivisections performed on the lower animals.

The first series of observations were made upon the cerebellum, birds (chiefly pigeons) being selected as the subjects of experiment. When a part of the grey matter of the cerebellum is removed, a great tendency to atrophy and absorption is observed in the white matter. The same observation applies to the brain. The removal of the entire cerebellum generally has no influence on neighbouring parts. But exceptions to this law occur, *1st*. When the animals die soon, in which case alterations analogous to red softening are found in the tubercula quadrigemina and the periphery of the medulla oblongata; *2d*. In animals which have survived for months the removal of a great part of the cerebellum, the posterior lobes of the cerebral hemisphere and the tubercula quadrigemina become the seats of erosions, loss of substance, and cysts, but the spinal cord is not affected.

Superficial injuries of the cerebellum produce no disturbance, but deeper injuries produce those disturbances of movement which have led to the idea that the cerebellum is the centre for co-ordination of movement. The phenomena are the following: The animal resembles a drunk man, and staggers; it falls forwards, backwards, and in all directions; it sets up its head and neck in a peculiar manner; it seeks to maintain its equilibrium by balancing its wings and resting on its tail; in addition, the feet often execute movements from before backwards; the extremities do not appear to be cramped. Sometimes very slight signs of paralysis are observed. The most remarkable fact is, that these phenomena disappear at the end of half an hour or an hour. When the animals survive and the wound heals, the walk is a little uncertain, but generally all the symptoms disappear in a few days. Wagner thinks it probable that the phenomena described are due to disturbance of the deeper parts, such as the peduncles of the cerebellum, some fibres of the pons or of the medulla oblongata. Brown-Séquard has come to the same conclusion from pathological facts, and believes that these disorders of movement are due to disturbance of the adjacent parts, and not to absence of the cerebellum.¹

When injuries are inflicted on one side of the cerebellum, movements of rotation occur, sometimes on the same side, as that of the lesion, sometimes on the opposite side. These movements remain for a variable length of time, and if the animal survives, they finally disappear. Incomplete paralyses are sometimes observed on the side of the lesion, but more frequently on the opposite side. Convulsions are rare. The functional disorders of the muscular system observable in pigeons are—1. A tendency of the posterior extremities to place themselves in extension; 2. A movement of torsion of the head and neck; 3. A particular trembling movement of the wings, neck, trunk, and posterior extremities. Animals having these symptoms are agitated by the slightest excitation, though they possess all their senses, can voluntarily execute slight movements, and even momentarily flex their posterior extremities. Vomiting is almost always a symptom of lesion of the cerebellum, and, as frequently, watery alvine evacuations. There is not a complete arrest of digestion as Bernard has stated, but that act is performed more slowly and less perfectly than in the natural state. The animals generally become thinner, the feathers fall off, the claws become pale, and there is a diminution of temperature. Nothing was observed which indicated any relation between the cerebellum and the genital organs. General and special sense, as also the psychical functions, were unaffected. In regard to the theory of Flourens, Wagner thinks there are many probabilities in its favour, but thinks it is not an exact expression of the functions of this organ. On the other hand, he thinks there is nothing against the opinion of Schiff and Valentin, that the disturbance of movement depends upon imperfect fixation of the vertebral column from injury of the superior cerebellar peduncle. This explanation Wagner considers insufficient for all the phenomena.²

¹ *Journal de Physiologie*, 1859. *Lectures on Central Nerv. Syst.*, 1860.

² Wagner appears to be somewhat obscure in regard to the theory of Flourens. At one part he says disturbances of movement are due to injury of deeper parts, and that consequently they disappear in time; at another part he says the theory of Flourens has many probabilities in its favour.—W. G.

An analysis of pathological cases shows that a staggering walk, rotatory and forced movements, and paralysis of motion of the opposite side are frequent symptoms. Functional disorders of the muscular system are also met with,—spasms, cramps, and epileptiform convulsions, also general or partial trembling. Prolonged attacks of vomiting occurring periodically are very frequent; in their absence, anorexia, pyrosis, hiccup, and flatulence are present in many cases. Wagner has observed nothing in man corresponding to the watery evacuations in pigeons. In very few cases did he find symptoms indicative of a relation betwixt the cerebellum and the genital functions. Lesions of sensibility, such as pain in the occipital region, are rather frequent; but the persistence of general and special sensations shows that a lesion of the cerebellum does not interrupt the course of sensitive fibres between the brain and the periphery. In the majority of cases the psychical functions are unimpaired; if not, there is probably some lesion of the cerebrum. In experiments in mammals the symptoms correspond to those observed in man and in pigeons. General trembling, for instance, has long been observed. Mechanical excitation produces movements in the stomach, intestine, and genito-urinary organs. (*Budge, Valentin, Schiff, and Spiegelberg.*)

Cases occur in which considerable destruction of the cerebellum is found, and yet no functional disorder, or very little. Such cases are, however, very rare. Cases in which pain was the only symptom are not so rare (see *Abercrombie*). Such cases resemble those in pigeons in which part of the cerebellum is destroyed, and in which all the functions are re-established.

Wagner concludes that there is a remarkable correspondence between the phenomena observed in man, mammals, and pigeons, relative to the functions of the cerebellum. In all classes of warm-blooded animals, it is a morphological equivalent.

Wagner thus sums up his conclusions as to the functions of the cerebellum :

1. The cerebellum has nothing whatever to do with the transmission of sensitive impressions.

2. Although in most cases of disease of the cerebellum morbid sensations are present, these are due to compression of nerves at their origin, or of the fibres of the spinal cord. The vomiting, which is so frequent a symptom, is explained in the same way.

3. The cerebellum does not preside over reflex action, nor does it receive the terminations of centripetal nerves.

4. The cerebellum is not a central organ either for general sensibility or for the special senses. When the latter are affected, they are so secondarily.

5. The cerebellum has no part in the psychical functions.

6. The cerebellum is an organ exclusively motor, for the muscular apparatus of animal, and probably, too, of organic life.

7. Amongst motory functions, it is certain that the cerebellum has an essential part in the co-ordination of symmetrical movements of the body, and notably of the movements of progression.

8. Vivisections and pathological cases show that the cerebellum may become the point of departure of a direct excitation of certain muscular organs, notably of the abdominal viscera, specially of the genital organs, and probably also of the heart.

In some remarks on the minute structure of the cerebellum, Wagner seems to believe that a certain number of cell-processes loose themselves in the finely-granular stroma, which by some is considered as a connective-tissue (*Virchow and Kölliker*), by him (and previously by *Henle*) as a diffused ganglionic substance not condensed into cells.

The remainder of the essay is devoted to the physiology of the brain, and is in part psychological. His researches have led the author to the belief that all psychical acts are, in their ultimate phase, to be referred to a great number of distinct points situated in the cortical substance of the brain, and not to a single central point forming a common *motorium et sensorium*.

The brain and spinal cord may be regarded as a reunion of systems of points

to which converge three classes of conducting lines: 1. Centripetal or sensitive; 2. Centrifugal or motory; 3. Commissural, or uniting different points to each other. As to these points, a definite knowledge of the nature of the grey substance is required ere we can decide whether they belong to the two following systems, or to one of these only. 1. Multipolar cells, giving insertion to fibres, or united together by distinct fibres; 2. Circumscribed granulations of the grey substance receiving the prolongations of fibres, or a part of these fibres.

Wagner agrees with Ludwig in thinking that psychical phenomena are "the result of a certain number of conditions proper to the blood and to the brain," or perhaps to all the nervous system. There may be in the blood numerous conditions of which we have no notion, and it seems to Wagner that this question has been too much identified with that of the structure and functions of the brain. From a comparative study of the weight of the brain and the intellectual qualities of individuals, Wagner is not inclined to believe that the brains of the intelligent are distinguished by a greater weight. Brains may be divided into two classes, according to the complexity or simplicity of their convolutions; but there does not seem to be any marked correspondence between the number of the convolutions and the intelligence of the individual. —*Journal de Physiologie*, 1861.

REMARKS UPON THE FUNCTIONS OF THE CEREBELLUM. BY BROWN-SÉQUARD.
(An Appendix to preceding Paper.)

The author makes the following criticisms on Wagner's conclusions as to functions of the cerebellum:—

1. The cerebellum is neither a centre of perception of sensitive impressions, nor a place of passage for the conductors of these impressions. But in consequence, perhaps, of pressure on the pons, and perhaps by influencing other parts of the brain, anæsthesia is sometimes a symptom of a lesion of the cerebellum.

2. Vomiting is more frequently a symptom of lesion of the cerebellum than of the pons varolii, and in many such cases cannot be accounted for by pressure on the pons. It is produced by irritation of the cerebellar tissue.

3. Convulsions may be produced by inflammation of the tissue of the cerebellum. Cases prove this.

4. Although this organ cannot be viewed as a centre of vision or hearing, it has a special influence on vision. In sixty cases collected by Brown-Séquard, in which the cerebellum was the seat of a lesion, there was amaurosis in one or both eyes. In many of these the latter could not be accounted for by pressure on the tubercula quadrigemina. Like vomiting, amaurosis may be caused by irritation of the cerebellum.

5. Brown-Séquard agrees with Wagner's opinion as to the psychical relations of this organ.

6. The cerebellum is *not* an organ exclusively motor for the muscular apparatus of animal life.

7. It is certain that the cerebellum has *not* an essential part in the co-ordination of the symmetrical movements of the body. The experiments even of Wagner himself prove that the loss of co-ordination may be restored in a few days or weeks. Slight pricks produce as much disturbance of the voluntary movements as ablation of the organ. The disturbance is due to irritation of the various peduncles of the medulla oblongata and the pons. Vivisections prove, 1st, That notwithstanding absence of the cerebellum, voluntary movements can be regularly performed; 2d, That, without lesion of the cerebellum, irritation of the neighbouring parts can produce disorders of movement even more considerable or more complicated than those which we see after removal of the cerebellum. Pathological facts support these conclusions.

8. In reference to an influence over abdominal viscera, everything in this field of experiment needs revision. *The cerebellum possesses none of the functions which have been attributed to it.*

NOTE ON A CASE OF MOUVEMENT DE MANÈGE CONSEQUENT UPON A HÆMORRHAGE INTO THE PONS. BY H. M. PARIS.

NOTE ON ROTATORY MOVEMENTS. BY BROWN-SÉQUARD.

The subject of M. Paris's observation was a young cat, which sustained an injury of the left-half of the pons and the left-middle cerebellar peduncle. The symptom was a circular movement from *left to right*,—*i. e.* on the same side as that of the lesion. (Longet asserts the movement in such a case is on the opposite side.)

Brown-Séquard remarks, that three species of rotatory movements are at present known. 1. Rolling or rotation round the long axis of the body; 2. The *mouvement de manège* or turning; 3. A peculiar movement which the animal executes without the axis of the body deviating to right or to left, but by its becoming the radius of a circle of rotation, the head of the animal being at the circumference of the circle.

Rolling movement is observed, after lesion of the middle cerebellar peduncle, of certain parts of the pons and medulla oblongata, of the auditory nerve, or after dragging of the facial nerves, or, lastly, sometimes before the death of animals in which a suprarenal capsule has been injured or extirpated. The turning movement is observed after a lesion of the optic thalamus, of the cerebral peduncles of one of the tubercula quadragemina, of certain parts of the pons, of the medulla oblongata and spinal cord; also after dragging one of the facial nerves, and in irritation of the cerebral lobes, by the *Cœnurus*. The third kind of movement, observed by Schiff and Brown-Séquard, occurs after certain lesions of the pons and testes.

The side of turning and rolling movements has no relation to the side paralyzed, in consequence of a lesion of the encephalon or medulla, whence it results that the explanation given by Lafargue, and accepted by Longet, is completely false. Schiff and Brown-Séquard have noticed that two lesions near one another on one side of the encephalon can produce turning, the one on the same side, the other on the opposite side. The rolling movement is in general an exaggeration of turning; that is to say, when there is diminution in intensity of the cause of rolling, this same cause produces turning.

Brown-Séquard's theory is the following:—Rotatory movements are simply the result of convulsions localized in certain groups of muscles, and an irritation, direct or indirect, is the cause of these convulsions. It is easy to observe when an animal turns or rolls, 1. That the rotatory movement is not produced by contractions similar to those produced by volition; 2. That certain groups of muscles are in a state of persistent tonic contraction; 3. That the head and neck are dragged by a spasmodic movement towards the side of turning, or that they are spasmodically twisted on their long axis in the case of rolling; 4. That sensibility and volition often persist, and great efforts are made to resist the spasmodic muscular action.

From two cases the author has observed, it appears *that in man, as in animals, rotation can result uniformly from contractions of groups of muscles without the slightest vertigo or disturbance of intelligence, volition, or sensibility.*—*Journal de Physiologie.*

NEW EXPERIMENTS ON THE RESPECTIVE INDEPENDENCE OF THE CEREBRAL FUNCTIONS. BY M. FLOURENS. (COMPTES RENDUS, 1861.)

RESULTS OF THE SECTION OF THE SEMICIRCULAR CANALS. BY J. CZERMAK. (COMPTES RENDUS, 1860.)

In support of his conclusion, that the organ for the intellectual functions is the brain exclusively, the organ for the co-ordination of movements the cerebellum, and that each acts independently, Flourens gives the following experiment:—The brain proper was extirpated in pigeons and rabbits, and injuries were then inflicted on the cerebellum, the pons, and the semicircular canals. Exactly the same results followed these injuries as when the brain was not removed. According to Flourens, injury of the semicircular canals of the ear

is followed by peculiar movements; so that, on division of both the horizontal canals, sudden powerful movements of the head from right to left, and the reverse, occur; section of the two inferior vertical canals produces sudden movement of the head from below upwards, and the reverse; section of the superior vertical canals is followed by movement from above downwards, and the reverse. Besides these movements, division of the horizontal canals produces a rotation of the animal in the horizontal direction; division of the inferior vertical canals, turning over of the animal from before backwards; division of the upper vertical canals, turning over from behind forwards; also movements in the direction of the canals. These experiments Flourens repeated upon animals the brains of which had been removed, with the same results. Czermak has repeated and corroborated the experiments of Flourens, but neither offer any explanation.—*Henle u. Meissner's Bericht*, 1860.

CONTRIBUTION TOWARDS THE DOCTRINE OF THE FUNCTIONS OF THE SPINAL CORD OF THE FROG. BY F. GOLTZ. (KÖNIGSBERGER MEDICINISCHE JAHR-BÜCHER.)

Goltz opposes very decidedly the idea entertained by Pflueger that the spinal cord is the seat of a sensorium or principle of intelligence. Pflueger's experiments were founded upon the idea that the movements of decapitated frogs, following irritation, are to be regarded as the actions of a mind (Seele); if the animal is prevented from fulfilling its purpose by some obstacle, it seems to consider, discovers new unusual expedients, and thus shows signs of intelligence. These experiments of Pflueger, Goltz has repeated. If then, after the frog had set itself with its legs drawn up, and had recovered from the operation, the inner condyle of the femur was irritated with acetic acid, Goltz remarked that not only the hind foot, but also the fore limb, was used to remove the acid. If the under segment of the posterior limb was previously amputated, the same movements occurred,—contractive movements of the stump, and removal of the acid with the fore paw. Never did Goltz observe the employment of the other posterior foot (as Pflueger noticed) to remove the acid, nor the restlessness which Pflueger describes in the amputated animal, which seeks after a new mode of removing the irritation. Generally, when a part of the skin of the back was irritated with vinegar, the animal employed one posterior limb only, but, three times in fifty, both posterior limbs were employed. Goltz blinded several frogs, amputated one of the posterior feet, and irritated a part of the skin of the back. Purposeless movements resulted, and though the animals were kept six weeks, and the experiment was constantly repeated, they seemed to learn nothing, but continued to repeat the purposeless movements of the stump. In regard to what appear extraordinary purposive movements, viz., when a brainless frog resists with a stroke and a push hard bodies pressing on it, but guards itself against fluids by wiping them off, Goltz remarks that these two modes of irritation act in very different ways.—*Henle u. Meissner's Bericht*, 1861.

ON THE EXCITABILITY OF THE SPINAL CORD. BY M. A. CHAUVEAU.

By his researches the author has been led to the following conclusions:—

A. In the physiological state in adult mammals, the cord is not on all points endowed with excitability, that is to say, capable of being so impressed by irritations as to react in producing movements or phenomena of sensibility.

B. The antero-lateral columns are quite inexcitable on their surface, as well as in their deep parts white or grey.

C. The posterior columns are inexcitable in their deep parts, but are very excitable on their surface, and more particularly on their external border, towards the line of emergence of the posterior roots.

D. Their excitation produces exactly the same phenomena as excitation of the posterior roots, that is to say, pain and reflex convulsions, more or less generalized, if the cord communicates with the brain,—reflex convulsions only, if the cord is separated from the cerebral organs.

E. These reflex convulsions are the only motor phenomena which are

developed from irritation of the spinal cord. This organ is not capable of producing movements in the muscles, as do the motor roots.

F. The excitation which produces convulsions does not act as regards conduction, like that which, applied to the motory spinal roots, determines local muscular contractions; in the motor nerves the excitation follows a uniform direction, the centrifugal direction, to reach the muscles in the medulla, the irritation propagates itself in two senses, that is to say, from above downwards and from below upwards, and thus causes to contract the muscles above as well as below the point where the irritation is applied.

G. Thus, it is not correct to recognise in the medulla an anterior part, motory, with centrifugal conduction like the anterior roots, and a posterior part, sensitive, with centripetal conduction like the posterior roots. The similitude which has been drawn in regard to property between the two orders of spinal roots and the two orders of fibres of the cord is not justified.

H. The insensible parts of the cord never excite muscular contraction when they are irritated, as always happens, as well above as below the point irritated, when the excitation acts on the sensible parts; and this property of producing, by irritation, phenomena of motility and of sensibility resides in a single point of the spinal cord, the surface of the posterior columns; the distinction in the medullary column of the seat proper of motility, and of the seat proper of sensibility cannot then be made in the sense commonly understood by physiologists.—*Journal de Physiologie*, 1861.

DETERMINATION OF THE MODE OF ACTION OF THE SPINAL CORD IN THE PRODUCTION OF MOVEMENTS OF THE IRIS DUE TO IRRITATION OF THE CILIO-SPINAL REGION. BY M. A. CHAUVEAU.

The question which the author endeavours to answer is, Whether the spinal cord, when irritated, acts directly or reflexly on the iris? Budge and Waller have supposed or assumed that the action is direct. Chauveau has found that with the muscles of animal life any action excited through the spinal cord is a reflex action. Is it so with the muscles of organic life?

Experiments instituted on this point seem to prove that irritation of the anterior or lateral columns has no effect on the pupil; but the same irritation applied to the posterior columns produces dilatation of the pupil. Irritation of one posterior column in the cilio-spinal region acts on both pupils, but more strongly on the pupil of the side on which the irritation is applied. When the posterior roots in the cilio-spinal region are irritated, exactly the same phenomena ensue. Chauveau, therefore, concludes that the cilio-spinal region acts as a reflex centre, and not directly upon the pupil.—*Journal de Physiologie*, 1861.

ON HEMICRANIA OR MIGRAIN. BY DR E. DU BOIS-REYMOND.

The subject of observation was the distinguished author himself. The principal symptoms of an attack of hemicrania, coming on at an interval of three or four weeks, are general malaise, pain in the temporal region, gradually increasing, never passing the medium line, and disappearing towards evening. Pain is increased by any cause which determines blood to the head. The temporal artery feels like a cord; the face is pale; the eye of side affected is small and injected; the pupil is dilated towards the termination of the attack; the ear of the side affected becomes red, and feels hot to sensation and touch.

Migrain, in the author's opinion, is a tetanus of the muscular coat of the arteries of half of the head, in dependance on the cervical portion of the great sympathetic of the side affected. The heat and redness of the ear at the end of the attack are due to exhaustion of the muscular coat of the vessel from its long contraction, the cause of the tetanus having ceased to act. The seat of this tetanus is probably in that part of the spinal cord termed by Budge and Waller the cilio-spinal centre. During and after the attack the spinous processes of the dorsal region are painful to pressure.

When the cervical sympathetic nerve of a rabbit is galvanized the animal does not cry, because the rabbit is not a sensitive animal. The muscular pain

in tetanus probably depends on compression of the nerves distributed to the interior of the muscles. In the case of the arteries the cause of the pain is probably the same, being increased by the lateral pressure when from any cause more blood enters them. We must suppose, in admitting hemicrania to be a neuralgia, that the sensibility of the nerves is increased. In this form of hemicrania (for it is only a *form* of the disease) therapeutic appliances ought to be addressed to the cilio-spinal region.

REMARKS ON THE PRECEDING PAPER. BY DR BROWN-SÉQUARD.

Migrain may sometimes be accompanied by contraction of the vessels of the brain, but the pain cannot be caused by contraction of the muscular fibres of these vessels, because the sensibility in blood-vessels is low, and in experiments on dogs and cats (which are very sensitive animals) no sign of pain is elicited where the cervical sympathetic is galvanized. Supposing the vascular nerves to be in a state of hyperæsthesia, muscular compression is not the exciting cause of the pain, for, in a voluntary muscle, section of the tendon relieves the pain, though it does not remove the contraction of the muscle and the pressure on its nerves. Pressure is not the cause of pain. A galvanic excitation of the nerves of the muscles is more probably the cause. Other difficulties exist in regard to Du Bois-Reymond's hypothesis. One of these is that the eye is small and the face pinched; these are symptoms of paralysis of the sympathetic and not of its irritation. The irritation must be partial; if it were not, epileptic vertigo would have resulted.

In most of the cases of migrain, observed by Brown-Séquad, the face, the ear, and the eye, presented the symptoms of *paralysis* of the great sympathetic, and not those of irritation of this nerve.—*Journal de Physiologie*, 1861.

Part Fourth.

MEDICAL NEWS.

JOTTINGS FROM THE PARISIAN HOSPITALS.—No. III.

BY WILLIAM TURNER, M.D. (EDIN.)

THE HOSPITAL LARIBOISIÈRE—its site and construction. CHASSAIGNAC—his appearance and manner—"Drainage tubes"—Use of nitrate of silver—His operating theatre and its advantages to the student—His recent operations, and use of the *écraseur*. ST LOUIS HOSPITAL.—Wards—Skin diseases treated—BAZIN and HARDY's views—HARDY's new classification of skin diseases—Objections to BAZIN's "arthritic" eruptions—Treatment of scabies in St Louis. TROUSSEAU—His cases of *paracentesis thoracis*—Illustrative case—Analysis in late case of *saturnine eclampsia*—Statistics of operations in Parisian Hospitals.

THE *Hôpital Lariboisière* far surpasses any other establishment of the kind I have seen in Paris, and is considered, I think with justice, a model hospital. It is distant about four miles from the *Ecole de Médecine*, being situated in the extreme north of Paris, in what appears to be a very healthy situation. It is quite new, having been opened only about eight or nine years ago, and was erected at an expense of 8,000,000 francs, nearly 3,000,000 of which were left by the noble lady whose name it commemorates, the Comtesse de Lariboisière.

It forms a large oblong square, but not as one edifice, the wards being situated in detached buildings, which are termed *pavillons*. You enter through a spacious gateway, and find yourself in a stone-built corridor, which runs along the four sides of the square. On one side of this corridor are the windows of numerous

rooms which seem to be set apart for consultation, dining, and other general purposes,—these rooms extending from pavilion to pavilion; while the other side of the passage is constructed almost entirely of glass, and looks into a courtyard, laid out with grass and flower plots, with a fountain in the centre, which affords an agreeable look-out for the patients from the wards, as well as a pleasant exercise-ground for the convalescents. These corridors also are excellent airing yards for the patients, who can at all times enjoy a stroll in them, despite the vicissitudes of the weather; and they also afford protection to the officials and domestics in passing from one ward to another. The roof, moreover, supplies convenient communication between the upper stories without the necessity of descending to the ground floor. And here, perhaps, I ought to remark, that in all the hospitals of Paris (however far short they may fall in their internal arrangements) much more attention is paid to external appearances than in ours at home, for in most of them you find these little gardens and fountains, with open corridors, giving the advantages I have mentioned.

On each of the two larger sides of the square project outwards five substantially constructed symmetrical buildings, three stories high, separated from each other, but all opening into the corridor; in most of these each story constitutes a ward, which is thus well lighted, and has a free circulation of air around it; the others form the residences of the officials, laundry, etc. At the end of the court, opposite the gateway, is a beautiful little chapel, whose architecture and internal embellishment are of exceeding beauty. The wards are large, lofty, and commodious, walls and ceilings being tastefully painted in oil-colours of a marled pattern. The atmosphere in them, though still “not quite up to the mark,” is cooler and purer than in any of the other Parisian hospitals that I have yet frequented, and in them are to be found what seems to be rather a rarity in many of the hospitals, ventilators. In fact, the principal fault here seems to be one which is common to almost all the hospitals of Paris, viz., the too great numbers of beds, which, though not so crowded together as in most of the other institutions, are still far too numerous for the space, and all, as usual, are surrounded with the agreeable-looking, but very obnoxious little white curtains. Even here, however, the patients are not quite free from erysipelas, and I was told to my surprise, by an *interne* of one of the hospitals, that the mortality in the *salle des accouchements* is comparatively greater here than in those even of the Hôpital des Cliniques.

The only surgeon whose clinique I have followed in this hospital is Chassaignac, whom I formerly mentioned very cursorily. He is about the middle age, under the average size, slightly inclined to corpulency, and with rather a square face and broad chin. His whole bearing clearly indicates a man of the utmost self-reliance. He is of a merry talkative disposition, and has a very insinuating manner with the patients, with whom he jokes right and left, pats them on the cheek, and turns them as he wills, keeping them all in the best of humour. In going round the wards, or in the operating theatre, he will sometimes, when requiring an instrument, dive into the depths of his not particularly small coat-pockets, which apparently constitute a most extensive cutlery establishment, and fish up the necessary article. Although a specialist, he is not a man of the same extreme views as Maisonneuve, who, with his *ligature extemporanée*, is evidently a follower in his wake, and attempts to appear original by putting forth as his own the ideas of Chassaignac, only slightly modified. Chassaignac seems to be always guided by true scientific principles; while the rough surgery and crude experimentation of Maisonneuve, although instructive, remind one very much of the surgery of a former age. Chassaignac apparently possesses

much shrewdness and considerable foresight, though, like most specialists, he carries out his own peculiar views to an unjustifiable extent. He has written several surgical works, and, about the time he first came into notice, published, I believe, a translation into French of the works of Sir Astley Cooper. In the wards he carries the use of nitrate of silver to an absurd extent, almost every patient in his wards receiving an application of it; but, with commendable prudence, he uses a different brush for every patient, and sometimes even for different wounds on the same patient, the brushes being improvised for the nonce by one of the attendants. Here we see the *drainage* system of treatment, first introduced by Chassaignac, carried out to its utmost limits. He employs it in all cases of abscesses, particularly if these are deeply placed, of diseased bone, etc. He passes an india-rubber tube, perforated along the sides, through the abscess or through the flesh in the vicinity of a diseased bone; and he says that by these means the pus gradually drains away, the cavity, in the case of abscess, at the same time contracting without any danger of purulent infection, or other serious accident occurring, and that at last there is simply a sinus left, which readily heals. He leaves the tubes in for a period varying from a few days to one or two months. He generally runs a trocar and canula through the part in the proposed course of the tube, and then withdraws the trocar, which takes the tube along with it, the latter being left *in situ* on retiring the canula, and then the two ends are tied together to prevent displacement. He has a large number of patients under this mode of treatment in his wards at present, and it is assuredly rather a ludicrous sight to see a poor fellow with perhaps a dozen or sixteen ends of these tubes dangling from his hip, and ramifying through the gluteal region like so many worms. In his wards you also see the French characteristic want of delicacy in the handling of female patients in its full development. On his approaching a bed, a patient—female of course—wheels round her nether regions to the edge of the bed, her feet fly upwards, and her thighs are grasped and drawn asunder by herself, all these movements being executed with almost military precision; the little surgeon then approaches, applies his nitrate of silver to the vagina, anus, or whatever it may be, and the patient again assumes her normal position as if there was nothing at all out of the way in the procedure, or only laughs at the ridiculous nature of the affair.

The arrangements in the operating theatre are the best I have seen; in the other hospitals I have frequented it frequently happens that some things are wanting when required, the patient is not sufficiently chloroformed, and consequently struggles and impedes the operator, and the assistants crowd round the table so that some bushy head, increasing the evil from its uncombed condition, generally obscures the view. With Chassaignac the programme is different; the patient is generally well chloroformed; instruments can be had at command; the assistants are prevented from acting as eyesores to the students; and during the operation with the *écraseur* he ordinarily gives a sort of running commentary upon the case in hand. Lately, at some of his clinics, which take place on the Mondays, he introduced the drainage tubes in a number of cases of chronic abscesses, etc.; removed by the *écraseur* some hemorrhoidal tumours, a polypoid growth, and a small carcinomatous mass from the rectum, in different individuals; divided several fistulæ, extirpated a carcinoma of the breast, all with very trifling loss of blood. In a case of *grenouillette* (ranula, double), a small cystic tumour beneath the tongue, of a double contour, from the frænum linguæ running across the centre of it, he punctured the sac with his trocar, taking care that it should be below the level of the Whartonian ducts, and left behind one of his drainage tubes, rather an uncomfortable lingual appendage. With his *écraseur* he does

almost everything, from the removal of a hemorrhoid to that of a limb, as evidenced by the preceding and the following cases. He operated with it on a young lad for varicocele, for which he had been refused admission into the army, and with perfect success. He also showed a number of cases which had been already operated upon; one for epithelial cancer of the tip of the nose in which he passed three needles through the part, tied a thread behind them, and then applied the *écraseur*; the organ had a remarkably good appearance, though still somewhat discoloured from the effects of the operation. I also saw two other cases, one of amputation at the middle of the thigh, and the other of disarticulation of the hip-joint, both done by the *écraseur*, the latter patient retaining a small fistula from a slight necrosis,—both cases, in other respects, looking remarkably well, and evidently in very good health. There is another case also in the ward of a female who has recently undergone amputation at the thigh by his favourite instrument, and is as yet doing very well. He operated for cataract one day, and endeavoured to make the incision in the cornea, and to open the capsule of the lens by the same stroke; but in this instance he had great difficulty in evulsion of the lens, owing to the opening in the cornea being too small, so that the affair was not very satisfactorily performed. I should be inclined to say that he has too heavy a hand for delicate operations, probably on account of his using the knife so rarely. I have unfortunately not had an opportunity of seeing him perform any of the major operations with the *écraseur*. He exhibited to us a very remarkable and interesting case of multiple hernia in a man; one tumour of good size was situated in the epigastric region just beneath the xyphoid cartilage, another at the level of the cartilages of the lower ribs of the left side, a small one at the umbilicus, and, lastly, a left inguinal hernia.

The *Hôpital St Louis* is also situated at a considerable distance from the *Ecole de Médecine*, being almost as far off as the *Lariboisière*. It stands in a dirty locality, in the neighbourhood of one of the canals, and I should fancy not in the healthiest position for an hospital. It is an old building, and covers a very large extent of ground. The plan of it is at first rather puzzling; it appears to be in the form of a square within a square, with numerous archways perforating the inner portion to allow of free passage from the central court to the outer square, and in which arches are situated, the entrances to the wards. The pavilions of which it is constituted are two stories high. The wards are generally of great length, and, as usual, contain too many beds. Those on the ground floor are much too low in the ceilings, which are not above a dozen feet high, and of a vaulted form, supported along the centre by a line of stone-built buttresses, which give them an uncomfortable cellarlike appearance. The roofs of the wards of the upper story, however, are of very good altitude, being at least double that of the lower, but in none of the wards could I see anything in the form of ventilators. They have a very close musty smell, as one would naturally expect from the nature of the diseases treated in them; but it is no doubt very much increased by the insufficiency of the ventilation. This hospital affords ample opportunities for the study of cutaneous affections, for almost every variety of skin disease is represented here, and at the same time one can receive the benefits of the instructions of the most eminent authorities on the subject. Acute febrile diseases are also admitted here, for I have seen a number of cases of typhoid fever, etc., in the wards, not from their being classed amongst the exanthemata, but probably owing to the inconvenience of removing patients affected with these maladies to hospitals at a greater distance from the locality. There is, however, one objection to this practice, viz., the placing of these patients among the ordinary cases in wards where the beds are so close to each

other. There are six physicians and two surgeons attached to this hospital; the former being Gibert, Hillairet, Devergie, Cazenave, Bazin, and Hardy; the surgeons Richet, and Denonvilliers the professor of surgical pathology at the Ecole de Médecine. Each physician has one day in the week for consultation and the reception of patients. At these consultations from 250 to 300 or more patients are passed through the physician's hands every morning, and of course in such an accumulation of cases they are "rattled over" rapidly, and sometimes I fancy rather superficially. The principal benefit, therefore, is to be derived from following the visits; and of the men here I should say that Bazin and Hardy are the best teachers, as being of the most advanced school in this class of affections; the former has charge of the children's in addition to some of the ordinary wards. Bazin and Hardy have both written very able and valuable works on this special branch of medicine, in which they dwell with much emphasis upon the necessity of viewing these diseases in their constitutional aspect, and of rejecting the classification founded on the anatomical characters of the affections, as promulgated by Willan, Bateman, and Biett, and still adopted by Gibert, Cazenave, and Devergie. They found their classification on the basis of the natural method of Alibert. Hardy gives his as follows:—

1. The *difformités*, as naevi, lentigo, ichthyosis, etc.
2. *Maladies accidentelles*, as erythema, urticaria, etc.
3. *Eruptions artificielles*: eruptions produced by the use of toxic or medicinal agents, as the erythema caused by copaiba, eruption produced by arsenic, etc.
4. The *parasitaires*, or parasitic diseases.
5. *Fièvres éruptives*, as scarlatina, etc.
6. *Eruptions symptomatiques*, where the eruption is only an accessory phenomenon, as in typhoid fever, the erythema of pellagra, etc.
7. The *Dartres*: herpetic affections, as eczema, pityriasis, etc.
8. *Scrofulides*.
9. *Syphilides*.
10. *Affections cancéreuses*, i.e. of the skin.
11. And, lastly, *Maladies exotiques*, as yaws, Greek elephantiasis, etc.

Hardy dwells very much on the great importance of the physician being able, not so much to recognise whether an eruption is vesicular or papular, as to be able to detect the constitutional vice to which it owes its origin; and he expresses his conviction, from much observation, that cancer is often allied to the dartrous affections, that it depends on their special diathesis is only an ultimate manifestation of it, and that the dartrous are eminently subject to it. He objects strongly, however, to a class put forth by Bazin, termed the *éruptions arthritiques* or *arthritides*, composed of a number of eruptions of Hardy's dartrous class, with several other affections which the latter considers purely accidental; all these, however, according to Bazin, depend on a gouty or rheumatismal condition, which he terms *arthritides*, and while proving refractory to the usual remedies applied to cutaneous affections, disappear before the employment of anti-arthritic medicines. Hardy objects to this class on many grounds; such as that he does not believe that such a condition as *arthritides*, in the sense in which Bazin holds it, has been proved to exist; that his colleague has united together two conditions essentially distinct and requiring different treatment,—viz., gout and rheumatism. After many other objections, too lengthy to enter upon here, he concludes by stating, that these so-called *arthritides* in his hands have not only resisted the use of anti-arthritic remedies, but that they have been more easily cured by anti-herpetic treatment, and that when they resisted this treatment they proved just as obstinate to that of arthritis.

At the St Louis the importance of the use of baths is fully recognised; they are employed to a large extent, and the hospital is well supplied with them,—both simple and medicated. At the consultations in the morning, a large percentage of the 250 or 300 patients who usually present themselves, consists of cases of itch. It constitutes an amusing scene to see such cases coming in, presenting their hands and persons, the promptitude with which the diagnosis is formed, and the simple information given,—*La gale, Samedi, à huit heures*. Saturday is the field-day for exterminating the tiny, but only too potent destroyers of personal comfort and ease. All the itch patients of the week assemble on Saturday morning, and are put through a process of less than two hours' duration, which relieves them of their plague, and saves the necessity of receiving a large number of patients into hospital. They are subjected to the following process, relative to which Hardy says, that there is not the slightest danger of causing any internal derangement from employing a treatment so rapid in attaining its ends. If the case is complicated, it is necessary first to overcome the inflammatory eruption by antiphlogistics, emollient lotions, and baths, and then after some days, when the acute condition has completely disappeared, the *parasiticides* are put in force. The preparations most frequently employed are the sulphuro-alkaline compounds, unguents with mercury as their base, etc.; but the method of using the parasiticide is of more importance than the agent itself. The frictions to be immediately mentioned ought always to be general and a little rough, so that not a single acarus may escape. It was owing to the frictions being only partial, and applied only at the points where vesicles were observed, that a reappearance of the disease so frequently took place. The treatment consists of three stages: the *first*, lasting half an hour, during which the patient is well rubbed over from head to foot with black soap, by which he is freed of all sordes that may be attached to the skin; the *second*, succeeding this preparatory friction, during which he is plunged into a simple bath for half an hour, and the integument becomes well softened; and the *third*, consisting of a general friction of the surface, practised with the following ointment:—

Sulphur,	.	.	.	.	.	14 drachms.
Sub-carbonate of potass,	.	.	.	.	.	7 "
Axunge,	.	.	.	.	.	10 ounces.

The patients keep this upon the surface till the following day, so as to prolong its contact with the acari sufficiently to cause their destruction, and also to serve as a disinfectant of the clothing; but the latter desideratum may be obtained more easily by fumigations of sulphur, or even in a less objectionable manner, by simply exposing them to an elevated temperature, the acarus, in common with others of the inferior forms of life, being incapable of retaining its existence in a temperature above 80° (Centigrade.) In private practice, the above treatment requires to be modified to a certain extent. I was fortunate enough to be present last Saturday while about forty men were undergoing this process. The whole affair constituted a very ludicrous scene. There they all were, in one room, in the primitive condition of their first parents, scrubbing away at their integumentary surface in a most vigorous manner and the best of humour, all jabbering as only Frenchman *can* jabber; while the excited attendant, standing at the door, was shouting out to them to apply the soap to the parts of their neighbours inaccessible to themselves, or to assist some little urchins of 6 or 8 years of age, who were standing half-terror-stricken by the clamour around them; the scene being a perfect Babel of confusion. They next entered the baths, to which, owing to the slipperiness of the floor, some of them had to be assisted by the attendants, who took them by the hair of the head (this being

the only part where anything like a firm grasp could be had), the application having rendered each of them "as slippery as a greased Indian." As they were too numerous for the baths at command, some of them had to be occupied by two patients at a time, nothing being seen above the surface of the water but two rough heads grinning at each other, or each bandying jokes at his neighbour's expense. Having remained here the requisite time they returned to the scrubbing-room, where the first process was repeated; but this time with the medicated ointment, whose formula I have given above, instead of the black soap. They now once more donned their garments while in this greasy state,—rather an uncomfortable condition to be in till the Monday, when they were to commence a course of six baths. The total number of patients treated on this occasion was sixty-six, including females. Unfortunately no lectures are given at St Louis in winter, but there is a summer course.

Trousseau resorts frequently to the use of paracentesis in cases of effusion into the chest, and has met with considerable success in this operation. During the past winter he has had several cases of this nature, some of whom succumbed before the progress of the malady, while others recovered. He even ventures to puncture the pericardium. In a case of heart disease which he had a short time ago, he entertained the idea of performing the operation, but was fortunately, from some concomitant circumstances, prevented from carrying his intention into execution, for, upon making the post-mortem examination, the amount of effusion was found to be very trifling. He has at present a case in the wards, of a boy whose chest was punctured for a pleuritic effusion, and who is now doing so well that in a few days he will be dismissed. The following is a short sketch of rather an interesting case, in which paracentesis thoracis was resorted to, but in this instance only as a palliative. A young woman, *æt.* 22, was admitted on the 25th of February. She had been delivered at the Maternity Hospital on the 14th of the same month, under the influence of chloroform, the labour having been severe and tedious. Eight days after her confinement she returned home, but was compelled on the above date to seek admission into the Hôtel Dieu, for a cold which she had caught in consequence of imprudent exposure. On admission, she appeared to be very anæmic, a bruit was audible in the vessels of the neck, both arterial and venous, and under the microscope the blood showed numerous isolated large white corpuscles. During the evening and night of this day she experienced severe and prolonged rigors, with considerable oppression of breathing, pulse weak and 108 per minute, tongue coated, with thirst, loss of appetite, and constipation. On the 28th, there was a repetition of the shivering, and she complained of pain in the right breast, which was much swollen, as was also the left; this was attributed to suppression of the lacteal secretion, her child having been sent to the *dépôt*, where it died of convulsions shortly afterwards. In the evening she was suddenly seized with a most violent and excruciating pain in the right side, and at the same time the respiration became very laborious. She was ordered sinapisms, hot fomentations, and applications of chloroform. On the 1st of March, the breast was still swollen and painful; the pulse 140 per minute, oppression of breathing considerable, and anxiety of countenance very marked. There was great pain on the slightest pressure being made on the thorax; there was also dullness at the lower part of the right side of the chest, with large mucous râles, but neither vesicular breathing nor ægophony was audible. On the 2d March, at the upper part of the right chest there was heard loud tympanic resonance, with amphoric breathing and metallic succussion sound, but no vesicular murmur; at the lower part of the same side there was dullness with distant mucous râles; and the left side was normal. There was a very trifling expectoration of saffron-coloured viscous phlegm; no history of a tuberculous tendency

could be elicited. The diagnosis given was circumscribed pneumonia, and metastatic abscess from puerperal pyæmia, perforation of the lung, and as a consequence, hydro-pneumo-thorax. *Ordered* subcutaneous injections of solution of atropine night and morning, with administration of mercury and digitalis. On the 3d of March, these symptoms continued; there was marked prominence of the upper part of the right chest anteriorly, and the respiration was entirely performed by the left side; gums slightly swollen. *Ordered* to suspend the calomel, to continue digitalis, and to apply chloroform liniments. On the 4th, the patient's condition had become so alarming, from the extreme exhaustion and the oppression of breathing, that it was deemed necessary to perform paracentesis, which was done by entering a trocar between the seventh and eighth ribs, and drawing off a quantity of a horribly fetid, sero-purulent fluid. The proceeding afforded immense relief to the patient. A gum-elastic sound was retained in the aperture in order to keep it permanent. On several subsequent occasions more of the same kind of fluid was withdrawn, and injections of a strong alcoholic solution of iodine and iodide of potassium were made, without producing much pain. Up to the 6th March four *litres* (French) had been withdrawn, ameliorating in a marked degree the condition of the patient. On the 7th, diarrhoea had set in with great anxiety and oppression, the pulse was 158 per minute and very feeble, and in the chest a faint transmitted respiratory murmur was audible. The succussion sound was diminished, but there was still great metallic tinkling posteriorly, and the thorax had commenced to contract. The iodine injections were continued, and chalk and bismuth ordered. After this the patient gradually sank and expired on the 13th. The post-mortem examination gave the following results:—perforation of the summit of right lung, with circumscribed pneumonia and purulent deposit; the pleural cavity lined with a thick false membrane in a state of putrefaction; no tubercles in the lung; uterus healthy except some deep engorgement of the os and cervix; no pus found in the cavity or structure of either uterus or Fallopian tubes.

The following are the results furnished by the analysis in the case of saturnine eclampsia, the history of which I gave in my last. There were obtained 3 milligrammes of sulphuret of lead from 250 grammes of the substance of the spinal cord; from the brain rather less, and from the liver more than from any other organ in the body, the quantity being about four times that found in the nervous system,—viz., about 12 milligrammes. It was proved, on reliable evidence, that the patient had only wrought 24 days in the lead manufactory.

The following statistics will, I think, prove interesting, in connexion with the discussion at present going on in regard to the hygiene of the hospitals. They consist of the results of the great operations performed in a large number of the hospitals of Paris, during an average period of the last ten years, and are collected by M. Trélat, a rising young surgeon of this city. The operations are,

Coxo-femoral disarticulations,	. . . . .	3
Amputations of thigh,	. . . . .	360
Disarticulations of knee,	. . . . .	4
Amputations of leg,	. . . . .	418
Do. of foot,	. . . . .	116
Disarticulations of shoulder,	. . . . .	27
Amputations of arm,	. . . . .	141
Disarticulations of elbow,	. . . . .	4
Amputations of forearm,	. . . . .	44
Do. of hand,	. . . . .	27

Total, 1144

These gave a mortality of 522, or 45.6 per cent. Of the operations 568 were performed for pathological lesions, and gave 223 deaths, or 41 per cent.; 470 for traumatic causes, with 261 deaths, or 55.5 per cent.; 106 for undetermined causes, with 28 deaths, or 26 per cent. The low percentage of the latter figure is due to its containing a proportionally larger number of infants. The mortality amongst the males was 438 deaths to 908 operations, or 48.2 per cent.; that of the females 84 to 236 operations, or 35.5 per cent. Trélat explains the comparative difference of mortality by the greater vitality of the female sex, and the relative rarity of operations and serious wounds in female wards.

Speaking generally of the results of operations on both sexes, he finds that the lowest figure of mortality exists between the ages of 5 and 15,—viz., 18.9 per cent., or 15.2 in pathological cases, and 16.6 in traumatic. From birth to 5 years of age the mortality is almost the same as from 15 to 30. After 15 it increases regularly and without interruption, independently both of the nature of the amputation and of the sex. After the age of 70 it reaches such high proportions, 95 per cent., or 1 cure out of 20 operations, that Trélat considers interference should not take place in such cases. He compared these with similar statistics collected by Malgaigne for the period 1836 to 1841, and found that in the three great amputations, of the thigh, leg, and arm, the death rate had notably decreased. Thus, in 1841, for these three operations the percentage was respectively 62.6, 55.2, and 45 deaths per hundred, while the corresponding figures in Trélat's list gave 52.7, 44, and 42.5; a gain of nearly one patient out of 5. A comparison which displays so marked a progress, Trélat thinks, should give confidence in the future, and ought clearly to indicate that advance may still be made.

PARIS, 7th April 1862.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1861-2. MEETING VI.

Wednesday, 2d April 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

I. THE WIRE SETON IN HYDROCELE.

Dr James Young read the following communication on the Use of the Wire Seton in Hydrocele:—

In the month of August last I reprinted, among other papers, an article on this subject, in which I advocated the views brought forward by Professor Simpson in favour of the wire seton in hydrocele. The consequence was a very elaborate paper by Dr Gillespie in reply, read by that gentleman in this place in November, and since published in the Edinburgh Medical Journal.

Before reading two or three communications which I have received on this subject, allow me to make only a few observations,—for were I to be wholly silent, it might be inferred that I, for one, thought the cause of the wire seton totally lost. No conclusion could well be more unfounded than this.

In reference to the subject under discussion, I have to state, in the general, that I am still of the same opinion, in spite of all that has been advanced to the contrary. It is not my intention to notice all the points touched on by Dr Gillespie in his paper, but only a few of them.

Permit me to refer, in the first place, to what he admits in favour of the wire seton. On the one hand, at page 630 of the Journal, he says—"The result of extended investigation into this plan of treatment has proved that hydrocele may be cured, and both speedily and easily cured, by such a method." Again, at page 635—"It is evident that the wire seton, when all due care is taken, may speedily and safely effect a radical cure." And once more, at page 636—

"The principle of the operation is correct, so far as it goes." Observe now, on the other hand, how these admissions are qualified. "It (namely, extended investigation) has no less satisfactorily established the fact, that a certain, and no small percentage of cases, will suppurate notwithstanding every precaution." And again—"It is an unquestionable fact that alarming suppuration may ensue." That suppuration may occur, and has occurred, I readily allow, yet to the averment, "notwithstanding every precaution," I demur, and contend that, with the use of such precaution, suppuration follows in only a limited number of cases. Mr Pollock, of St George's Hospital, tells me that he has been obliged to keep the wire seton in the sac for ten and twelve days, causing the patient even to walk about ere he saw suppuration established. The two principal points to be attended to in the use of the seton are, first, to discover whether you have to deal with an inflammatory or a *non-inflammatory* diathesis; and, secondly, to watch carefully the progress of the case, in order to withdraw the seton ere the suppurative action threatens. On attendance to the diathesis of the patient, and on careful observation, I deem everything as regards success must necessarily depend. It is not enough to attend in the general to the maxim of Pliny—"Experimentis optime creditur,"—an axiom universally acknowledged,—but we must keep in view all the conditions on which success depends. Dr Gillespie goes on to say—"Communication with atmospheric influences is the true reason or cause of suppuration, quite independent of what the seton is constituted." On this subject Dr Handyside informs me that he was some years ago in the habit of injecting air into the tunica vaginalis for the cure of hydrocele, but that he never saw suppuration induced by it. Dr Gillespie further says—"If metallic substances are to be used for the cure of hydrocele, it would be a safer method to use the trochar and canula, and then to insert a probe, or some metallic body, and that this would be only *half* as likely to induce suppuration." It may, I think, be fairly asked, wherein lies the difference between the use of the metallic seton and the metallic probe? If the *wire* will produce suppuration of the tunica vaginalis, how could the *probe* fail to have a similar result? In proof, so far, of the views I have advocated on this subject, I have brought here to-night a patient on whom I operated with the wire seton some twenty months ago. He will be happy to answer any questions put to him by any gentleman present. He was operated on with iodine by the late Mr Mackenzie in the hospital here, but the hydrocele returned, and he was treated subsequently by the wire seton,—the result of which is now apparent.

5 Cavendish Row, Rutland Square, Dublin, 25th November 1861.

DEAR SIR,—Since the publication of my paper upon the *Radical Cure of Hydrocele by the Introduction of Iron Wire*, I have tried this plan repeatedly in both private and hospital practice, and I do not see any reason to alter the view which I then expressed of its superiority to the ordinary method by the injection by tincture of iodine. I have, however, found it necessary to make some slight alterations in the details of management. Instead of introducing *four* doubled strands, I now use only *one*; and, in place of leaving the wire in until the inflammation be well established, I now withdraw it upon the slightest appearance of inflammation. In fact, I find that the purpose can be effected by a *comparatively trifling* degree of inflammation, and that much pain is in this way saved, and all possibility of undue inflammation, or even sloughing of the tunica vaginalis, is in this way avoided. I have seen some trouble occasioned also by infiltration of the fluid into the loose cellular tissue of the scrotum. This I now obviate by a well-fitting *elastic* suspensory bandage, and by light strapping.

My reasons for considering the wire seton superior to the iodine injection are as follows:—In the injection process you throw in a quantity of irritating fluid, and, if the diathesis of the patient be *very* inflammatory, an excessive and *uncontrollable* inflammation is set up; but if the diathesis be the contrary, your treatment probably fails. With the iron wire seton (especially if you withdraw it on the onset of inflammation) in the former case you escape all danger; while in the latter, by leaving the seton in long enough, by twisting the wire about, etc., etc., you can hardly fail in setting up sufficient inflammation. In fact, the essential merit of the seton is that it is eminently *controllable*. Another advantage (although as both operations are com-

paratively simple, a secondary one) is the simplicity of the introduction of the seton. Last, though not least, the seton is almost painless. In one of my cases you may remember the patient had some years before been cured of a similar hydrocele on the opposite side, by injection with tinct. of iodine, by my accomplished predecessor in St Vincent's Hospital, the late Dr O'Bryan Bellingham, who performed the operation, I feel convinced, with his usual skill and humanity. This patient told me that the seton was far less painful than the injection, and far more expeditious. Trusting that you will excuse these hurried remarks,—I remain very sincerely yours,

James Young, M.D.

F. B. QUINLAN.

The Abbey, Hexham, 25th November 1861.

DEAR SIR,—I have operated on three cases of hydrocele by the iron wire seton according to the directions laid down by you; all of which were most successful. I am happy to add, up to the present time they are free from any appearance of a return of the complaint. One only of the above cases I reported in either the *Lancet* or *Medical Times*.

I have the greatest confidence in the wire seton, and prefer it to all other modes of operating for the radical cure of hydrocele.—I am, dear sir, yours truly,

James Young, M.D., Edinburgh.

THOS. STAINTHORPE.

16 George Street, Hanover Square, W., 9th January 1862.

DEAR SIR,—I have treated hydrocele frequently with the wire seton, and have observed little difference between this method and that by a thread or threads carried through the tunica vaginalis in the same way. The latter plan I have used occasionally during the last 25 years.

In most instances the result has been satisfactory. In some there has been severe inflammation, and every now and then a failure.

I have never seen severe immediate pain from the introduction of the wire, as sometimes follows the use of the iodine injections; but with this exception, I have not been impressed with any superiority which the method possesses over the more common one with tincture of iodine.—I am, dear sir, yours faithfully,

James Young, M.D.

WM. FERGUSSON.

The next letter I have received is from Mr Pollock of St George's Hospital, but as it occupies twelve pages, I propose only reading some extracts. The letter is an important one, as it brings out a new feature in the treatment of hydrocele by the wire seton,—namely, that although in some cases it has failed, from a want of inflammatory action, in but one case has he seen suppuration induced.

27 Grosvenor Street, W., 27th February 1862.

MY DEAR SIR,—My experience has now extended over a very large number of cases, and the results at which I have arrived are very various. The first case in which I attempted the above method of treatment was in a youth suffering from encysted hydrocele of the chord. The introduction of the wire was attended with singularly little irritation in the first instance. I kept the lad quiet in bed for some days. At the end of a week the suture was removed, but some weeks after the fluid returned. With my present experience, I should not have removed the suture merely on account of the time it had remained in the sac. I will further explain my treatment in such cases. But the seton was introduced a second time, and the lad allowed to walk about constantly afterwards. Very little irritation was occasioned, and, consequently, at the end of a fortnight, the suture was still in the sac. The parts were then supposed to be sufficiently thickened to justify the removal of the suture; and the case, some weeks afterwards, appeared quite free from any return of fluid. The lad promised to return to me if any recurrence of fluid showed itself, and as he was a very grateful and well-conducted youth, I have reason to believe he would have returned had the treatment proved abortive. In this instance, you will observe the fluid only escaped through the opening made by the needle,—not drawn off by a trochar. In all subsequent cases I decided to use the trochar first, and then with a long needle introduce a wire or wires through the sac; and such treatment I have always since adopted.

The results of treatment in the number of cases that have come under my care for the three or four last years amount very much to this,—that in some instances the wire cannot be borne in the sac beyond 48 hours; in one it was removed in 24; in one it produced violent pain and suppuration, rather extensive, in 48 hours. In many cases I have retained the wire for 7 and 8 days, and not in a few from 10 to

14. Pain and swelling are the chief indications for the removal of the wire,—not without pain. If swelling be well established, and lymph be apparently well effused within the sac, I should not hesitate to remove the wire. On the other hand, some cases are wonderfully indifferent to the presence of the wire. In such a case, if at the end of 10 or 12 days there be no swelling or pain, I commence to tighten the wire by twisting the ends together, and continue to increase the degree of tension daily, until sufficient irritation has been set up. I have never to wait until the wire has cut itself out; but in one case, in which no irritation was produced for the first 10 days, the wire was gradually tightened, the parts rapidly thickened, and, though the wire was then removed, slight suppuration ran through the track of the seton; but the case soon convalesced.

In a few, I think five in number, the wire suture has failed to obliterate the sac from the first introduction; but in each of these cases, with my present experience, I have reason to suppose the result would have been otherwise. In one case the gentleman was not in good health, and as there was a good deal of œdema and redness of skin at the end of the fourth day, the wire was withdrawn—the fluid retained in the sac. The wire was again introduced, and retained for 8 days, and then withdrawn,—there being sufficient consolidation of the parts to justify an opinion that a satisfactory result had been attained; and such the experience of some months has proved to be the case. In another case, an officer who had been exposed to the effects of hot climates, the sac had been twice punctured, and the fluid drawn off—once punctured and injected with iodine, which failed to cure—once punctured with a laurel. This gentleman came under my care in the latter part of the year 1861. The silver wires, rather thick, and four in number, were introduced after the withdrawal of the fluid. There was singularly little irritation caused by the wire, and so little inconvenience did the patient suffer, that it was retained for 10 days, being occasionally moved. Slight spots of pus exuded from the points of perforation on the ninth and tenth days, and I then removed the wires. In 4 days the sac was quite full again of fluid. I should have tightened the wire in this instance, but that the patient was a restless person, and very sensitive of pain. The wire when tightened does generally produce a good deal of pain: therefore, in this instance, I did not have recourse to the alternative, especially as slight purulent secretion was commencing, and such a time had elapsed since the wire was introduced. The gentleman was much disappointed; but he stated that he would rather have fifty wires introduced at fifty different times than submit to one more injection. But he firmly believed the wire would not produce sufficient irritation, and no inducement on my part would persuade him to undergo a second introduction of a seton. I then decided to lay the sac open freely. This was done a few days ago, by passing a sharp curved bistoury through the anterior wall of the sac, and then a little lint was introduced into the sac for two days. Free suppuration was established, and all irritation has subsided, and the sac is filling up fast. I had recourse to a similar proceeding last week in a case in the hospital, which has also done well. Indeed, I believe laying open the sac of a hydrocele the most efficacious of all operations proposed, and almost as expeditious as most. A week or ten days suffices to set the patient free from all medical treatment. It only confines him to the house for a couple of days; and I have not yet seen the case in which it has failed.

But the treatment by the introduction of the wire is almost painless,—far less painful than any kind of injection. It requires the patient to be watched from day to day, and, even supposing slight suppuration to ensue, it is not attended with any evil consequences.—Yours faithfully,

GEORGE POLLOCK.

Such are the testimonies of my respected correspondents, whom I take this opportunity to thank. They add in some measure to the evidence previously adduced; and I think from these, as well as from much personal observation, that I may, without presumption, conclude these remarks with the language of an old poet, changing only the future into the present tense—

“An ego, tecum experiri vi majore?”

Dr J. D. Gillespie observed that when he read his paper on the Treatment of Hydrocele by means of the Wire Seton, in December last, the whole subject had been fully discussed; and as he did not think it would be fair to the Society to resume the discussion after so short a time had elapsed, he would confine himself to a very few observations. He was quite ready to admit that the wire seton might occasionally cure hydrocele; but he thought it was sufficiently well

established by the fact of so many cases having gone wrong, that it was by no means the harmless operation which Dr Young would make it out to be. It was known as a positive fact, that a good many of the cases suppurred, and that, not because the wire was left in too long, for suppuration had sometimes occurred days after the wire had been removed. Dr Gillespie thought that the explanation was this; the wire acted as a seton, and a permanent double opening was kept up in a shut sac, air got in, and in certain circumstances, suppuration occurred in much the same way as unhealthy inflammation occasionally followed surgical operations. Dr Young had stated, that at one time Dr Handyside had blown air into the tunica vaginalis in cases of hydrocele without any bad result, and had argued from this, that air could not be considered to act as an irritant; but this was very different,—there was no double opening, and of course the sac soon closed again, just as if it had been injected in any other way. Dr Gillespie had brought forward ten cases, in which suppuration of the sac occurred after the use of the wire, and probably the operation had not been performed one hundred and fifty times altogether; and this satisfied him that the method in question was inferior to the plan of injecting iodine, for he doubted whether, out of the innumerable cases in which iodine had been employed, ten could be picked out where the injection had been followed by suppuration. Of course he spoke only of the cases in which the iodine was injected into the tunica vaginalis, for if it were injected into the cellular tissue, inflammation and sloughing of the scrotum might occur. Dr Young had quoted Mr Pollock as a strong advocate for the wire; but Mr Pollock had said, that he thought laying open the sac as good a way of treating hydrocele as any other; and surely a surgeon who considered laying open the sac as mild and as effectual a mode of treatment as the introduction of wire, could not be looked upon as a strong authority in favour of the latter method.

The President had not been present when this question was discussed before, but had really very little to say regarding it. He must be within the mark in saying, that he had treated hydroceles by the injection of iodine a hundred and fifty times, but he had never once met with a case of uncontrollable inflammation. Formerly he had used port wine or sulphate of zinc, but had never seen the occurrence of suppuration of the sac. It was said that the treatment with iodine sometimes failed; but he (Mr Spence) had never known this to be the case where the hydrocele was simple, although, like every other plan of treatment, it might fail in cases of hydrosarcocele. So far as his experience went he was so satisfied with iodine, that he would not abandon its employment for anything else.

Professor Simpson asked, as his name had been mixed up with this matter, to make one or two remarks, although the subject was a surgical one. When working at the question of the tolerance of living tissues for the presence of metallic bodies, he had had two laws brought forcibly before his mind; the first was, that living tissues were intolerant of the presence of dead organized bodies like silk, hemp, etc.; the second, that they were tolerant of metallic bodies. The reason probably was, that when an organic body, such as a silk thread was introduced into the tissues, it soon absorbed fluid and swelled; but this fluid contained some organic particles which speedily decomposed; and, in consequence, the little decomposing mass irritated the surrounding tissues. When, on the other hand, a metallic body was introduced, it absorbed nothing and produced no irritation. At the same time, he had remembered what Hunter had said in his wonderful treatise on inflammation, regarding the little irritation produced by the presence of pins and needles in the animal tissues. That great physiologist had observed, that on opening the bodies of the cows which had grazed on bleaching-greens, he sometimes found the bodies stuffed with pins, and yet he had never found a drop of pus around them, the process of inflammation excited by their presence never having gone beyond the stage of adhesive inflammation. Looking also to what Mr Spencer Wells had stated regarding Professor Rothmund of Munich, that he had operated on upwards of a thousand cases for the radical cure of hernia, by reinverting the hernia, and then pass-

ing a wire through the tissues and peritoneum, without a single fatal case, he could not but think this illustrative of Hunter's statement. Accordingly, conjoining these things, and reflecting that in hydrocele the surgeon only wished adhesive and not suppurative inflammation, he (Professor Simpson) had suggested the introduction of a wire thread, which should both let out the fluid and set up a sufficient degree of inflammation. The first case had succeeded very well; then it appeared cases had occurred where suppuration took place, and still later the operation had again succeeded; there must evidently be some reason for the failures, and probably they depended upon some cause which was very easily avoidable. Dr Gillespie was very likely correct in believing that the communication with the air was the cause of the suppuration; not that he (Dr Simpson) thought the air acted as an irritant, but that it favoured decomposition. If this were so, however, it could very readily be avoided, by making the opening much more oblique. Dr Simpson still thought this method of operating worthy of a fair trial, as it was far simpler than that by injection, and caused much less pain and uneasiness to the patient.

The President would only refer to one point. In curing hydrocele, what was wanted was not adhesion of the walls of the sac, but such a change in the membrane as should prevent a recurrence of the disease. This was the doctrine taught by Liston, who, in the language of that day, sought to restore the lost balance between the exhalents and absorbents.

Dr Handyside said it was evident that much uncertainty existed as to the cure of hydrocele. Sometimes very slight irritation succeeded, at others severe measures were necessary. He had at one period tried the injection of air, but he had often failed by that means; he had, however, been successful in *four* cases. He should, with reference to the treatment by means of wires, like to be informed what was the average duration of treatment. For his own part he was so satisfied, comparatively, with the treatment by injection of iodine, that he would be slow to adopt the more severe treatment by wires.

II. DIPHTHERIA AND ITS SEQUELS.

Dr Begbie read a paper on Diphtheria, which will be found at page 995 of this number of the Journal.

Dr Argyll Robertson alluded to the affection of vision, which was a frequent concomitant or sequela of diphtheria, and which in some cases was evidently due to an affection of the muscle of accommodation. In one of the cases recorded by Dr Begbie this condition existed, and it had been noticed that the vision was much improved when the child used spectacles. Recent observations had proved, that this affection was a sequela of many long continued and debilitating fevers, especially typhus and typhoid. When paralysis of the ciliary muscle existed, paralysis of the sphincter of the pupil almost always existed, and there was very often loss of power of other muscles of the eye, and of other parts of the body. In glaucoma, where the ciliary muscle was paralyzed by pressure, there was also dilatation and immobility of the pupil; in artificial dilatation by atropine, there was also paralysis of the ciliary muscle, and consequently loss of the adapting power of the eye. Paralysis of the ciliary muscle was readily diagnosed, because the affection of vision was much improved by the use of convex glasses. The whole of this subject had not been sufficiently worked out, but it was well worthy of being attended to.

Dr Handyside thought the Society was much indebted to Dr Begbie for his valuable paper. The disease had been not unfrequent in the south of England; but in Scotland it had been less common, and some doubts had even been expressed as to whether true diphtheria had been met with here. Dr Begbie's paper would, however, remove all doubt as to this point. He (Dr Handyside) could confirm various of Dr Begbie's statements; he had till lately been sceptical as to the existence of diphtheria in Scotland, owing to not having seen any well-marked cases. On the 16th of last November, he had been summoned to meet Dr Lunan of Blairgowrie, to see four boys and the governess of one family, in the adjacent lake district, suffering from this disease; the mother, he might state, had died, not of diphtheria, but of sheer exhaustion

produced by unremitting attendance upon her children. The ages of the boys were eleven, nine, five, and two and a half. The two eldest boys had got over the more acute symptoms before he (Dr H.) was called in. The leathery patches which had existed in their throats were in great part removed. The third boy was in a very dangerous state when Dr Handyside saw him; he applied Condry's solution internally, soothed the parts by the application of bran poultices, and supported the strength by the free administration of stimulants; three days afterwards he died of pure prostration. The three other boys and the governess were brought to Edinburgh for change of air; they all had the peculiar nasal speech due to paralysis of the velum, and the three boys suffered from amaurosis, so that they could not read the largest type, and laboured under paralysis of the legs from below the knees. Under the use of the tincture of the muriate of iron, nourishing food and wine, the two eldest boys and the governess gradually recovered. The fourth boy's head and neck (as his nurse expressed it) fell down on his chest, his muscular system becoming gradually impaired. In spite of treatment, little improvement in his general health took place. One day, Dr Handyside was sent for in great haste and found the child dead. The child had just had dinner, which he had taken well, when he put his head down on the bed, gave a sigh, and died. The child had not choked, and Dr Handyside's impression was, that the cause of death was paralysis of the heart.

Dr Peel Ritchie would ask Dr Begbie, whether he had noticed anything defective in the sanitary arrangements of the houses where his cases of diphtheria had occurred. He (Dr R.) had resided during the year 1860 in an institution in London where there were between two and three hundred patients; not one of the patients took diphtheria, although the disease was prevalent in the neighbourhood. The general opinion entertained was, that where the disease occurred, it was connected with defective drainage or with the presence of cesspools.

Dr Keiller had seen several cases of diphtheria, with one of which in particular he had been very much struck. A little girl eleven years old had been ill for three weeks, the exudation over the tonsils and palate, which had been so thick as to resemble a plaster of Paris cast, had almost entirely cleared away. The pulse, however, continued weak, there was great difficulty in swallowing, accompanied with great pain, which was especially referred to the ears, and, in consequence, the patient probably did not get a sufficient amount of nourishment. One day, while sitting up and conversing with the clergyman, she expired quite suddenly. A post-mortem examination was made, but nothing was found, and Dr Keiller had no doubt she had died from paralysis of the throat.

Mr Spence had a few observations to make, with regard to the propriety of operating in cases where the larynx became affected in the course of diphtheria. The first case he would mention was one where tracheotomy had been performed by his former house-surgeon, Dr Pow. One day, a patient presented himself in the surgical waiting-room, with a syphilitic bubo of some standing. At the time, Mr Spence put the question, whether the patient had any sore-throat, not suspecting, of course, the existence of diphtheria, but inquiring as to the existence of any syphilitic affection of that part; the answer was in the negative, and the throat was not examined. Directions were given that the patient should be admitted. In the course of a few hours, the nurse came to Dr Pow, saying, that the patient had something the matter with his windpipe. Various means were tried, but as all the symptoms became very rapidly worse, Dr Pow had very properly performed tracheotomy. The relief was immediate, and the patient slept well during the night. The next day, Mr Spence was told what had occurred, and that the patient was going on well; a short time afterwards, some of the other patients noticed him to turn round in bed; as he remained quite quiet, he was examined, and found to be dead. On post-mortem examination, it was abundantly evident that the man had had diphtheria, which had extended to the larynx, but whether there was an exudation at the time of his admission, Mr Spence was unable to say. The cause of death appeared to

have been paralysis of the heart. About six days before operating on the little patient whose case was detailed in Dr Begbie's paper, Mr Spence was called on by Dr Menzies to operate on a girl about four years of age, who had suffered from what appeared to be ordinary croup. At the time of operation there was no appearance of diphtheritic crust. The operation was performed on the Tuesday. The patient was relieved, and seemed to be going on favourably; and, though the mouth and throat were frequently examined, nothing was noticed until the Friday, when a white diphtheritic crust was seen on the back part of the fauces, which gradually extended forwards. The child sank under the general prostration induced by the disease. Here the breathing remained free to the last, although, all along there was difficulty of swallowing, so that some fluid always regurgitated by the tube. So much was this the case, that an assistant left in charge of the patient believed that the pressure of the tube must have caused ulceration, and established a communication between the trachea and oesophagus. Ten days afterwards Mr Spence was summoned to Dalketh, to see a child two years old. The parents had already lost several children from croupous disease on former occasions, and were very anxious that something should be done. The case was one of well-marked diphtheria, which had extended to the air-passages; tracheotomy was performed, and recovery took place. Four or five weeks after the operation, the child was not so well, but after change of air gradually recovered its strength. On the whole, he (Mr Spence) was very unwilling to operate in this disease, for where the chances of success were very small, he would rather avoid surgical interference. Still the operation had certainly saved this child in one instance, and though he might be unwilling to operate, he was bound to give a patient the benefit of the chance. Even in the unsuccessful cases, tracheotomy had always afforded temporary relief, and had made the fatal termination easier than it would otherwise have been.

Dr Pow alluded to the case narrated by Mr Spence, in which he had performed tracheotomy. The death at the time certainly had been most unexpected, as he had left the patient apparently going on well, a very few minutes before; he had now no doubt that paralysis of the heart had been the cause of the fatal result.

Dr Matthews Duncan observed that it was a somewhat remarkable circumstance, that while diphtheria had assumed an epidemic form in various places, especially in England, and more lately in Aberdeenshire, it had never presented that character in Edinburgh; a good many cases had no doubt occurred, but the disease had never been so general as to cause serious alarm to the public. When he (Dr Duncan) first saw the disease, he believed it ran a regular course, and could be divided into distinct stages like scarlatina. In the first case, the patient presented during the first week the symptoms of typhoid fever; presently the throat became affected, and was soon covered by a diphtheritic membrane. In the course of the third week the exudation had entirely disappeared. During this third week the patient suffered most; there was great pain in swallowing, constant salivation, but recovery took place without paralysis. He was since satisfied, however, that whatever might be the case in malignant epidemics, diphtheria, as it had occurred here, presented no regular course, but cases varied not only in intensity but in duration. With regard to the colour of the patches, when Dr Duncan had seen the case from the beginning, he had always found the exudation of a pure snowy white colour, which turned, in a short time, to a dirty yellow or ashy colour. He had seen a curious example of the disease, in a case of prolapsus of the uterus, where the exudation occurred on the mucous membrane of the uterus and vagina, and could be seen quite distinctly. At the time when the diphtheritic patch appeared, the woman complained of a sensation of scalding, and the exudation was of a pure, opaline white colour. It was a tough membrane, not uniformly spread over the affected surface, but while in some places so thin that the mucous membrane could be seen through it, was in others so thick as to look like a blister. In twenty-four hours the aspect had changed, and the patches were of a yellow colour and of uniform thickness. Here, while at first the diphtheritic patches were raised

above the mucous membrane, when their colour changed, the mucous membrane around them was raised so that they appeared depressed, and might readily enough have been mistaken for callous ulcers. These patches remained about a week, and then disappeared under the influence of a copious secretion of purulent matter (an acute gonorrhœa in fact), and the affected parts appeared healthy. At this time there were severe general symptoms, the patient was alarmingly ill, and a large recto-vaginal abscess formed, which required to be evacuated. The disease again returned, and, at present, similar patches were still adherent. Dr Duncan had seen another curious case in a newly delivered woman, where the disease had occurred twice. The first time the exudation affected the external surface of the gums in both jaws, which were covered with a white membrane, which was pretty easily peeled off but soon reformed; there was at the same time salivation with much pain; the disease lasted a week, but the patient recovered without any bad symptom. After a subsequent confinement the mouth was affected in the same way, but the symptoms were less severe than before.

Dr Stephenson, while a student, had witnessed an epidemic of diphtheria in Cheshire. One very characteristic symptom, which was almost constantly noticed, was an extremely fetid smell of the breath; Dr Begbie had alluded to the presence of this symptom in only one of his cases. The treatment employed was very much the same as that recommended by Dr Begbie, and had proved very successful. A remarkable circumstance was, that in no case had he heard of the occurrence of paralysis as a sequela of the disease.

Dr Struthers might mention a case where he had performed tracheotomy. The child, two or three years old, was a patient of Dr W. T. Gairdner, and the disease appeared in a most characteristic form. The laryngeal symptoms were most marked, and tracheotomy afforded the most perfect relief at the time. The child lived for sixty-one hours after the operation, but became gradually asphyxiated, and died. At first there was no false membrane in the trachea, but Dr Struthers had seen it gradually forming, and it could be taken off in flakes. On post-mortem examination not only the fauces and larynx, but the trachea and bronchi were found covered with false membrane, the exudation having extended downwards after the operation.

Dr Coldstream understood from Dr Begbie's paper that he had seen no cases of diphtheria between 1826 and 1858; he (Dr Coldstream) had, however, notes of a case which he had seen in July 1833.

Dr Williamson thought there was certainly a similarity between diphtheria and scarlet fever; he had not had many opportunities of seeing true diphtheria, but he had been led to believe that it was merely a bastard scarlatina. He believed that whenever you had diphtheria, scarlet fever was not far off. As to the first group of cases described by Dr Begbie, he (Dr W.) might mention that shortly after Miss A. was laid up with the disease, a patient of his own who had been much with her, became affected with well-marked diphtheria, and ten or twelve days afterwards, one of the female servants was attacked with malignant scarlet fever.

Dr Begbie had but few remarks to make. He could not agree with Dr Duncan in thinking that diphtheria ran an irregular course; he thought it was very analogous in this respect to typhus or scarlet fever, which, although presenting differences in individual cases, had, on the whole, distinctly characterized stages. In reference to the observation of Dr Ritchie, he (Dr B.) could not say that he had remarked any cases which had led him to believe that diphtheria was connected with deficient sanitary arrangements. In the first set of cases, which occurred near Leith, there no doubt had been a large dunghheap at a short distance from the house, and both Dr Paterson and himself, believing that it might have had something to do with the generation of the disease, had had it removed, but they had neither of them laid much stress upon this circumstance. Dr Begbie had been much pleased with Dr Robertson's observation with regard to the state of the eye in the amaurosis which was so often a sequela of the disease; he had not paid minute attention to the state of the pupil, but he hoped that Dr Robertson would follow out the subject he had suggested. As to the fetid

odour of the breath, Dr Begbie had only observed it in one or two cases, and he did not consider its remarkable foulness as by any means an essential attribute of the disease; in some of the worst cases, there was none from the beginning to the end of the case; in others, again, where there was a discharge from the nostrils, the odour was sometimes very offensive. Dr Begbie had been surprised to hear that, in an epidemic in Cheshire, no paralytic symptoms had been noticed, seeing that they were so common elsewhere; it was possible, however, that as they might have occurred during convalescence, they might not have been observed by the medical attendants. He (Dr Begbie) looked upon paralytic symptoms as being as closely connected with diphtheria as dropsy was with scarlatina. Dr Begbie must differ from Dr Williamson, as he considered scarlet fever and diphtheria essentially different; Dr Williamson had alluded to the case where a servant girl, who had been in the house with a lady suffering from diphtheria, had been attacked with scarlet fever; but the coincidence by no means proved that the two cases were connected in the relation of cause and effect. It must be kept in mind that, for the last six or seven years, Edinburgh and its vicinity had been scarcely ever free from scarlet fever; during the first three or four of these years there had been no diphtheria, and during the last two or three there had only been scattered and isolated cases.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XX.—MEETING X.

May 8, 1861.—Dr GRAHAM WEIR, *Vice-President*, in the Chair.

I. FATAL PERITONITIS AND PERICARDITIS DURING LABOUR.

Professor Simpson shewed a preparation of the lower segment of a gravid uterus, with a portion of the placenta still in apposition with the inner surface. The preparation had been taken from the body of a patient who had arrived at the full term of utero-gestation, and who died some hours after the commencement of labour, very suddenly, and without having presented any symptoms that could afford a clue to the cause of death. She had on one or two occasions had a slight escape of blood, but was moving about and seemed to be in the enjoyment of good health until Saturday, May 4th, when she had a shivering fit, and began to complain of pain whenever she moved. As she had come to her full term, and pains were recurring from time to time, a midwife was summoned in the evening, who remained in attendance during the night. The pains having continued for several hours, and no advance of the labour having appeared to take place, Dr Finlay, her usual medical attendant, was sent for about 5 A.M. of the 5th. Dr Finlay had found that she was fairly in labour, and that the os, though but little relaxed, was sufficiently dilated to enable him to ascertain that the breech was the presenting part. There seemed to be no particular necessity for his continued attendance; so he went home, intending to return about 8 o'clock, and leaving instructions with the nurse, who was a very experienced accoucheuse, to send for him sooner if she should see fit. He had not got back till 9 o'clock; and on arriving then at the patient's house, he had been told that the woman had suddenly died a few minutes previously. On laying open the abdominal cavity, they had found it filled with a quantity of serous fluid; in which some fibrinous flocculi were floating; the intestines were loosely gummed together, and were covered at parts with inflammatory deposits; similar purulent patches were scattered over the surfaces of the liver and spleen, and on several portions of the uterus,—more particularly at the parts where the ovaries and Fallopian tubes were in apposition with its surface. Since he had referred to the ovaries and Fallopian tubes, he (Dr S.) might be allowed to make a remark as to the relation of these organs and of the broad ligaments to the gravid uterus. He had always believed, and had been in the habit of teaching his class, that, during the increase in size of the impregnated uterus, the broad ligaments underwent but little change besides that of enlargement, and, in particular, that they never became split up in any degree, so as to contribute to the peritoneal investment of the enlarging organ. But the relation

of parts in this case had convinced him, that that doctrine was, to say the least, not universally true, for the layers of the broad ligaments on each side had been found to be so far split up and separated, and so spread out over the surface of the enlarged uterus, that the Fallopian tubes, up to their fimbriated extremities, came to be almost in contact with the outermost layer of its muscular coat; while the ovaries were lying about an inch or an inch and a half further back, along the surface of the uterus, and attached to it by an extremely short pedicle. The fimbriated extremities of both Fallopian tubes were very highly congested, and covered and surrounded with inflammatory deposits; the ovaries presented the same external appearances, were greatly enlarged, and were found on section to be soft and pulpy; the right contained a large corpus luteum. On cutting through the uterine parietes, their substance was found to be unusually soft and friable, giving way before the slightest touch. The foetus was found with the breech presenting, the sacrum looking forwards to the left acetabulum, and the foetal pelvis so tightly jammed down through the maternal brim, that some degree of force was required to dislodge it from its position. No local cause for the peritonitis could anywhere be discovered; nor was it possible to recognise any particular spot as that in which it had probably commenced. The only local lesion, independently of the results of the inflammatory action, that was found, consisted in a slight laceration of the muscular coats of the uterus on its inner aspect, at the level of the os internum, in front and towards the right side; corresponding to this lesion on the interior of the uterus there was a slight effusion of blood beneath the peritoneum; but there was no inflammatory deposit on the surface of the peritoneum at that point, and no evidence of any kind that the general peritonitis had there arisen, and thence extended over all the abdominal cavity; and in all probability the laceration of the uterus had rather been the result of the inflammatory changes in its texture than the primary cause of the wide-spread inflammatory action. The lower portion of the placenta was found to have been separated from the interior of the uterus to some extent; and this had doubtless been the source of the occasional hæmorrhage that had occurred before and during labour. That the peritonitis was of idiopathic origin seemed to be indicated by the circumstance, that the pericardium was found also to be the seat of some inflammatory changes; for its cavity was found distended with serum, and there was some small fibrinous deposits on the base of the heart, and at the root of the large blood-vessels.

Dr Simpson was not aware that there was any such case upon record of a patient dying of acute peritonitis during parturition, with the exception of one related by Dr Clarke, regarding which Dr Hamilton used to aver that they must have examined the body of the wrong patient in the dissecting-room. He (Dr S.) had once before seen a somewhat similar case along with Dr Graham Weir a number of years before. The lady was well enough to have been out shopping the day before her labour came on: she died immediately after the labour was terminated, and the cause of death was found to have been idiopathic pericarditis.

Dr Moir made some observations, and stated that some years ago he had had under his care a lady who suffered from peritonitis for ten days before the onset of labour, and who succumbed to the disease a day or two after the birth of the child. The child was born dead, and was found to have been the subject of inflammation of the serous membranes; one of the pleural cavities containing even a quantity of pus.

Dr Simpson said, that having had occasion to be at Mid-Calder a few weeks ago, Dr Dick had shown him a patient who suffered from various unusual symptoms, and who then seemed to him (Dr S.) to be the subject of an extra-uterine gestation. The patient had died shortly afterwards; and Dr Watson, Dr Dick's partner, had sent him the following account of the result of the post-mortem examination:—

"The patient whom you saw on the Thursday gave birth to a well-formed 5 or 5½ months male foetus on the Saturday forenoon following, and died at 11 P.M. of same day.

"I made an inspection of the abdomen on Wednesday; rather too late. I am very certain there was pus nowhere, but strong adhesive peritonitis principally in left pelvic region. The surface of the small and large intestines was healthy, except in this region.

"A. *Omentum* was tied to, 1, left uterine appendages; 2, left abdominal wall (inguinal region); and, 3, to *mesentery*!

"At 2, the peritoneum was several times thicker than normal, and it appeared to me to be such also over the body of the uterus; though I don't know what that is normally over the gravid uterus. These adhesions were evidently old; but at two or three sites there was that dirty grey softening of them as if indicating commencing suppuration. At least, I am more inclined to regard this as the explanation than any post-mortem change.

"B. *Uterus* was about $5\frac{1}{2}$ inches long (placenta, which seemed normal, had been tied to posterior wall): *was tied firmly* to bladder and to rectum. I think the adhesion of thickened peritoneum was so strong that there could not be filling or emptying of the bladder or peristaltic movement of the gut without acting as a direct mechanical excitant of uterine contraction. But if that were true, would not the converse be true,—frequent micturition and frequent motion of the bowels. There was (*but not within a month of death*) both frequent and painful micturition; and for nineteen days before death there had been no motion of the bowels. Above the seat of adhesion of uterus to commencing rectum, lay large scybalous masses,—not entirely packing up the gut. Enemata were never returned in full quantity.

"C. Left uterine appendages:—1st, Left ovary was nearly an empty sac. 2d, In front of and below ovary, and by side of uterus, were at least three cysts. a, Upper—which lay at root of ovarian ligament and Fallopian tube—was, say, one-half larger than a large walnut, had thin wall in front, and dirty straw-coloured fluid for its contents. b. Middle—lower in position, narrow, and elongated in form—contained three pieces of fat, more or less nearly the size of a bean, with a little serosity. c. Lower down still, a cyst, in size like the upper, with contents of a colour like the miner's lung, and soft, and, I should say, having a gangrenous odour: (we must remember the interval from Saturday night to Wednesday forenoon.) The left uterine veins were neither plugged nor inflamed.

"I regret not having specially looked at the comparative thickness of uterine wall above the neck in front and behind, in the light of *anteflexion being possible*.

"A night or two before you saw the case, the head of the foetus was much more within reach; lay, in fact, where you would expect a large calculus in the bladder to lie: and ballottement gave the most evident sign of unity of tumour felt through abdominal wall, and head felt per vaginam, *while, with finger behind the head and on the neck of uterus, I could not get the synchronous mobility*. Clearly now, this must have been from want of sufficient force; but there certainly was a striking difference.

"These uterine contractions had lasted *for a full fortnight*; and before that time I came home one day, and told the doctor how pain and swelling had shifted from right inguinal region, and were now in left pelvic do.; and that the finger felt hard and soft material alternately, in this side, per vaginam. There can be no doubt now, *that* was the pelvis of the foetus, though I had not that idea at the time."

II. RECOVERY FROM PUERPERAL CEREBRAL EMBOLISM, AND SUDDEN DEATH IN A SUBSEQUENT PREGNANCY.

Professor Simpson said: On the same day on which we examined the body of the patient whose history I have brought under your notice, I had occasion to assist at the autopsy of another patient, whom I had seen several times during life, and whose case was of a very different, and, to me, still more interesting nature. About five years ago, immediately after the publication of an essay on puerperal embolism, I was asked by Dr Alexander to see a patient who had arrived at the eighth month of her fourth pregnancy, and who, after walking up a stair, had been found by her servant lying

in a stupid and almost senseless state. When Dr Alexander saw her she was suffering from hemiplegia of the whole of the right side of the body, and he requested me to visit her along with him, with the view of consulting as to whether anything should be done towards anticipating the occurrence of parturition. Among other cases that I had published was one of the wife of a distinguished obstetrician, himself but recently dead. That lady, the nature of whose disease had been skilfully diagnosed by Dr Burrows during life, was found to have died in consequence of softening of the corpus striatum, produced by the impaction in one of the branches of the middle cerebral artery of a small embolus which had become detached from some of the cardiac valves. In Dr Alexander's patient I suspected that the same kind of accident might have happened, for the carotid artery was pulsating more powerfully on the left side than on the right; and there was no evidence of any congestive or inflammatory action having taken place within the cranium. Moreover, after a careful examination of the heart, Dr Halliday Douglas discovered that the mitral orifice was to some extent contracted; and it seemed in every degree probable that some vegetation might have been produced on the contracted valves during the period of pregnancy, when the blood is in a hyperinotic condition, and that as a result of the increased action of the heart, brought on by the effort of ascending the stair, some portion of these vegetations might have got loosened, and been carried into the cerebral vessels. Up to that time, so far as I am aware, no case of cerebral puerperal embolism of this kind had occurred in which the patient had made a recovery; and in this case I formed a very gloomy prognosis. She carried her child, however, to the full time, and was easily delivered; recovered subsequently so far as to be able to move about, although she walked lamely; had her power of speech impaired, and had only very imperfect use of the right hand. She has since borne one or two children without any untoward circumstances.

I had heard of her progress from time to time from Dr Alexander, but did not again see her professionally till Friday last, when I was summoned about mid-day, as she seemed to be dying. On my arrival at the house, I learned from Dr Alexander that she was in the seventh month of pregnancy: he had seen her the night before, and thought her not quite so well as usual, having remarked, in particular, that the left hand, which was the one she now always used in shaking hands, was unnaturally cold, although she herself declared there was nothing amiss with her general health. Her husband had left her at ten A.M., apparently well, but soon afterwards she became suddenly ill, and the servant, who was alone in the house with her, was afraid to leave her; so that the doctor was not sent for until after the return of her husband between twelve and one o'clock. Dr A. found her in bed, breathing very laboriously, cold and collapsed, but quite sensible and capable of answering his questions in her ordinary broken and inarticulate manner. He succeeded in making her swallow a little brandy; so that when I saw her shortly afterwards, she was not altogether so sunken as when he first saw her. But still she was evidently in a moribund condition. The countenance had an anxious, alarmed expression; the skin was cold and clammy, and strangely discoloured, being partly livid from the stasis of blood in the superficial vessels, and partly yellow, perhaps from the decomposition and diffusion of some of the colouring matters of the blood (one small vein in the columnæ nasi was especially remarkable from the excessive degree of turgidity and the darkness of the contained blood); the pulse was small and fluttering, hardly at times to be felt at all; the action of the heart was tumultuous and irregular, but the loud respiratory sounds in the patient's throat rendered it impossible to distinguish any cardiac murmur or any distinct pulmonic sound. The foetal movements had ceased, and no cardiac or placental sounds were audible. Two hours afterwards the patient died.

On making a post-mortem examination, we found the cerebral lesion to be seated at the base of the brain on the left side, below and to the external side of the left ventricle, where a cavity of considerable size existed, which involved the lower and anterior portion of the corpus striatum, and was lined by a very

vascular serous-looking membrane. This cavity was elongated, but contained almost no fluid; its lateral surfaces being in mutual contact. The branches of the middle cerebral artery running towards it from the fissure of Sylvius were all carefully examined, but no obstruction could in any of them be discovered. But if we reflect on the length of time that had elapsed since the occurrence of the hemiplegic attack, we can easily understand how all trace of the original cause of the cerebral lesion may have become obliterated. For we know that a pretty extensive destruction of cerebral substance may result from the impaction of an embolus in even a small artery; and in the lapse of years such an artery may have degenerated into a small undistinguishable fibre running in the pia mater; or the small plug may itself have become disintegrated and dissolved, and the lumen of the artery may subsequently have become restored. In either case the portion of brain temporarily deprived of its vascular supply, and perhaps otherwise damaged from the disturbance of the circulation in the surrounding vessels, had become destroyed, and its place only indicated by the kind of cystic cavity of which I have spoken. The source of the embolus was easily discernible in the condition of the mitral valves. The left auriculo-ventricular orifice was so contracted as barely to admit the point of the fore-finger; the valves, as well as the tendinous chords attached to them, were shortened and thickened, and on the free surfaces of each, towards the margins, there were one or two warty-looking projections which were overlaid by fresh coagula. There were firm recent clots lying behind the valves, which had probably begun to form during life, and impeded the heart's action. Similar coagula stretched along the pulmonary veins. I had imagined from the suddenness of the attack that an embolism might have taken place in some of the branches of one or other pulmonary artery; but these were found, on careful examination, to be all quite free, and the pelvic veins contained only fluid or loosely coagulated blood. The lungs presented no trace of any recent morbid affection, only they were slightly oedematous, and both, but more particularly the left, had undergone to a slight degree that kind of change which Virchow has described as brown induration of the lungs.

II. CALCULUS IN THE FEMALE.

Dr Peter Young showed a vesical calculus, and gave the following history regarding it:—"M. C., æt. 45, sister of a medical man lately deceased, had been suffering for the last eight years from pains in the back, shooting down to the limbs. These pains were sometimes very severe, and forced her to assume the recumbent posture. She had applied to various medical men without permanent relief. Among other things, she had been advised to try the waters at Dunblane, and had undergone a series of rubbings by a professional rubber.

"Late one evening, in January last, she called upon me. She said she had been lying in bed for several days, suffering intense pain in the head and genital region. When she attempted to walk, she was obliged to stoop forwards to a considerable degree, as the pain instantly became aggravated if she attempted to stand erect. When I first saw her, she had a pale, emaciated, anxious look. Her appetite was bad, and, according to her account, she had taken little or nothing for some days. Her pulse was small and thready, and she complained of great weakness.

"On making a vaginal examination, patient complained of great pain, so that I could not introduce my finger into the vagina. Around the urethra there were some folds of mucous membrane, which were very sensitive, and caused her to scream out when I touched them. Finding this condition of parts, I concluded the case was one of painful urethral caruncles, and removed them with a pair of scissors. Next day I called upon her, and she said that she had passed an easier night than she had done for some time. She now complained, that when she made water, she had great pain of a burning pressing kind in the urethra, more particularly when the last drops were coming away. As the patient was very nervous, and was afraid of undergoing a second vaginal examination, I administered chloroform, so as to enable me to make a thorough examination. The vagina was very narrow and rigid, and nearly

closed by a thick hymen. On rupturing this, the point of my finger impinged upon a hard projecting portion of the anterior vaginal walls. I at once conjectured that this was owing to a calculus in the bladder; and, on introducing a sound into the latter, soon elicited the characteristic click by striking the instrument against it. Considering the amount of suffering the patient had endured from the presence of the stone in the bladder, and that her animal powers were rapidly becoming exhausted from the want of sleep, etc., I determined to remove the calculus as soon as possible. Accordingly, after explaining the nature of the complaint, I proceeded to operate on the following day. After putting the patient well under the influence of chloroform, I dilated the urethra, by rapidly introducing a pair of dressing-forceps, and opening their blades so as to distend the canal. In order to prevent too much bruising of the parts, I made a small incision on each side, which facilitated the dilatation considerably. I then completed the dilatation of the urethra with my fore-finger, which I was enabled to do in two or three minutes. I then introduced a small pair of lithotomy-forceps, but found some difficulty in getting hold of the stone. The cause of this will be presently seen. After I did get hold of the stone, its extraction was readily effected.

"On examining the stone, it is seen to be made up of two portions, which had been formed at different periods. One of the portions is of an elongated form, resembling the kernel of a date, but larger. One extremity of this portion terminates in a narrow point, on which the second smaller piece is seated. The other piece is crescentic in shape, with its middle or concave surface attached to the pointed process, above referred to, of the longer piece. Of these two pieces, the larger lay in a cul de sac of the bladder, with the narrow pointed end directed upwards and exposed to the stream of urine; and over this exposed portion a second stone had formed, and which alone projected freely into the cavity of the bladder. The difficulty in getting hold of the stone was now easily explained. The larger portion was embedded in the walls of the bladder, and it was only the small portion that was exposed, and by which it could be laid hold of by the forceps and extracted.

"The patient made a rapid recovery, and in the course of two or three days after the operation, she could retain her water for the usual period.

"This case is interesting, as showing the necessity of careful examination in cases which at first sight would appear to be of a nervous character, and also that we may have painful caruncles in conjunction with stone in the bladder."

Professor Simpson said he had seen a good many cases of calculus in the female, and had treated, or seen them treated, in various ways. Sometimes the stone had been extracted through the urethra, after the canal had been dilated by means of forceps, sponge-tents, or incisions. The success of this operation depended chiefly on the size of the stone; and where the stone was small, and capable of being passed through a urethra, not so much distended as to render impossible the recovery of its muscular power, he (Dr S.) thought there was no easier and safer way of removing the calculus than by such a slight dilatation of the urethra. But where the stone was of any considerable size, it became necessary to dilate the canal and the neck of the bladder to such an extent that the patient was very liable to suffer afterwards from incurable incontinence of urine. He had seen a case of this kind in the west, where he dilated the urethra, by means of sponge-tents, so far as to be able to push the stone through it by means of the finger introduced into the vagina, but the power of the sphincter vesicæ was completely destroyed, and the patient was never afterwards able to retain her urine for any length of time; and he had heard of several such cases. There might, perhaps, be less risk of this unfortunate result if the dilatation of the urethra could be more rapidly effected; and Dr Corbett of Glasgow had proposed to effect such a rapid dilatation, by passing into the urethra a staff covered by a piece of India-rubber tubing, in a state of tension, which, when allowed to contract by its own elasticity, necessarily swelled up and to that extent stretched the tube. By the introduction of a series of successively larger pieces of India-rubber tubing in this way, sufficient dilatation of the urethra might possibly be very speedily effected. He had

once seen Liston slit up the urethra and so extract a vesical calculus, but the patient never recovered the power of retaining her water. Professor Buchanan was in the habit of cutting into the bladder along the outside of the urethra. In all cases, therefore, where the stone exceeded the size of a filbert, he (Dr S.) would prefer removing it through the vagina in the way he had extracted a stone about the size of a walnut, which he showed to the Society. In that case he had made an opening into the bladder from the vagina, by making a transverse incision through the vesico-vaginal septum, and after the stone had been drawn through it with a pair of forceps, the edges of the wound were brought together by four or five iron-wire sutures, in the same way in which he was in the habit of reuniting the revived edges of vesico-vaginal fistula. The patient was kept in bed for nine days with the catheter in the bladder; and when the stitches were removed the wound was found to have been healed. What he had done, in short, was to make a temporary vesico-vaginal fistula, which he had immediately closed. The thick fleshy lips of such a wound united more readily than the lips of a revived fistula. Had the whole wound not united, and had a fistulous opening been left, he believed he should have had no difficulty in closing it in the ordinary manner by a subsequent operation. He added, that lithotripsy had been tried in some cases of vesical calculus in the female, but that operation was not unattended with some considerable trouble and danger, while the removal of the stone per vaginam was quite safe, and a very easy operation.

Dr Graham Weir said that he had had a case under his care in the Infirmary some years ago, where the posterior wall of the bladder prolapsed through the vulva. The patient could never get the bladder completely emptied. He introduced a sponge-tent into the urethra, and through the canal thus dilated the late Dr Richard Mackenzie extracted seventeen small stones of the form and size of those usually seen in the gall-bladder. The woman recovered, and had complete control of the bladder. Various instruments for dilating the urethra had been devised; amongst others an apparatus by Mr Spencer Wells, the dilating portion of which consisted of a metallic stem, surrounded for some distance with a thin sheeting of caoutchouc, underneath which water could be introduced so as gradually to swell it up and so dilate the canal in which it had been placed. But in all cases where the stone was of any size, he (Dr W.) agreed with Professor Simpson in thinking that it was best to extract it by dividing the vesico-vaginal septum. He (Dr W.) thought that Dr Young's case was extremely interesting, as showing the possible conjunction of vesical calculus and urethral caruncles in the same person. These urethral caruncles very commonly gave rise to very much the same train of symptoms that we see caused by calculi in the bladder; and when in any patient suffering from such symptoms he had satisfied himself as to the presence of caruncles in the urethra, he had usually thought it needless to sound the bladder. Such a case as Dr Young's showed that the bladder ought in every case to be explored.

ARSENIC AND SESQUICARBONATE OF AMMONIA IN AGUE.

(To the Editor of the Edinburgh Medical Journal.)

SIR,—As a substitute for the preparations of cinchona in the treatment of ague, I doubt if there be any remedy more efficacious and trustworthy than the combined use of sesquicarbonate of ammonia and liquor arsenicalis. In ten cases, all adult males, treated solely with this remedy, it proved uniformly successful. Thus: in one case only—a quotidian—was its administration followed by two paroxysms; in seven other cases (one quotidian and six quartan) only one paroxysm subsequently recurred; and not one in the remaining two cases (one tertian and one quartan). As yet I have had opportunity of using these combined drugs in only two other cases of adult males; but, as both these cases had long resisted quinine, though readily yielding to the ammonia and arsenic, I do not include them in the preceding list. The quantity of the sesquicarbonate usually given was five grains dissolved in an ounce of water, with the addition of five minims of liquor arsenicalis; this dose being repeated *every two or every three hours*, according to the frequency of the paroxysms. In no case

did any inconvenience result, save some degree of griping in one patient, in whom, as well as in three others, there was slight itching about the eyelids, and this was not spontaneously complained of but in two cases. Doubtless the real anti-periodic power is to be ascribed to the arsenic, which the sesquicarbonate, while exaggerating perhaps its efficacy, renders more easily tolerated by the system.

EDWARD ADAMSON, M.D. Edin.

RYE, SUSSEX, *April 14, 1862.*

UNIVERSITY APPOINTMENTS.

UNIVERSITY OF ABERDEEN.—James Smith Brazier, Esq., has been appointed to the chair of Chemistry in the University of Aberdeen, rendered vacant by the death of Dr Andrew Fyfe.

UNIVERSITY OF EDINBURGH.—James Lorimer, Esq., Advocate, has been appointed Professor of Public Law in the University of Edinburgh.

UNIVERSITY OF GLASGOW.—John Nichol, Esq., of Balliol College, Oxford, has been appointed to the new Professorship of English Language and Literature in the University of Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

At the Comitia Majora of the Royal College of Physicians of London, held on Monday, 14th April, Thomas Watson, M.D., was elected President of the College; John Spurgin, M.D., George Burrows, M.D., Richard Quain, M.D., and Alexander Patrick Stewart, M.D., were chosen Members of Council; and John Spurgin, M.D., James Risdon Bennett, M.D., Francis Gibson, M.D., Alfred Baring Garrod, M.D., and Henry Oldham, M.D., were elected Examiners.

PUBLICATIONS RECEIVED.

Aeton,—The Functions and Disorders of the Reproductive Organs. By William Aeton, M.R.C.S., etc. London, 1862.

Drummond,—Homœopathy as practised in Manchester in Harmony with its alleged Principles: a Reply to Dr Roberts' Pamphlet. By John Drummond, M.R.C.S.L., etc. London, 1862.

Edwards,—The Examination of the Chest. By G. N. Edwards, M.D., etc. Lond. 1862.

Fayrer,—Clinical Observations in Surgery. By Dr Fayrer. Calcutta, 1862.

Mackenzie,—Pathology and Treatment of Phlegmasia Dolens: The Lettsomian Lectures on Midwifery. London, 1862.

Milroy,—Health of the Royal Navy considered. By Gavin Milroy, M.D., etc., etc. London, 1862.

O'Reilly,—The Placenta, Organic, and Animal Nervous Systems, etc. By John O'Reilly, M.D. New York, 1861.

Prichard,—Cases of Operative Surgery. By Augustin Prichard, F.R.C.S., etc. London, 1862.

Rayner,—Homœopathy: A Review of Dr Roberts' Attack on the Homœopathic Practitioners of Manchester. By Thomas Rayner, M.D., etc. London, 1862.

Sydenham Society, New,—A Clinical Treatise on the Diseases of the Liver. By Professor Dr Fried. Theod. Frerichs, Vol. II. Translated by Dr Charles Murchison. London, 1861.

Wells,—On Long, Short, and Weak Sight. By J. Soelberg Wells, M.D., etc. London, 1862.

PERIODICALS RECEIVED.

Births, Deaths, and Marriages, Monthly Return of, for March. Edinburgh, 1862.

British and Foreign Medico-Chirurgical Review,—April. London, 1862.

British Medical Journal,—April 5, 12, 19. London, 1862.

Dublin Medical Press,—March 26, Apr. 2, 9, 16, 1862.

Gazette Hebdomadaire de Médecine,—Mar. 28, April 4, 11, 18. Paris, 1862.

Gazette des Hôpitaux,—March 25, 27, 29, Apr. 1, 3, 5, 8, 10, 12, 15, 17, 19. Paris, 1862.

Gazette Médicale de Paris,—Mar. 29, Apr. 5, 12, 19, 1862.

Gazette Médicale d'Orient,—March. Constantinople, 1862.

Glasgow Medical Journal,—April 1862.

Health and Meteorology of Manchester,—March 1862; and Report of the Sanitary Association.

Journal de Médecine et de Chirurgie,—April. Paris, 1862.

Journal de la Physiologie,—No. 17, Jan. Paris, 1862.

Journal für Kinderkrankheiten,—Jan. and Feb. Erlangen, 1862.

Madras Quarterly Journal of Medical Science,—No. VII. Jan. 1862.

Medical Critic and Psychological Journal,—No. 6, April. London, 1862.

Medical Times and Gazette,—Mar. 29, Apr. 5, 12, 19. London, 1862.

Revue de Thérapeutique Medico-Chirurgicale,—April 1, 15. Paris, 1862.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Epidemic of Scarlet Fever at Donaldson's Hospital during the Autumn and Winter of 1861.* By JAMES D. GILLESPIE, M.D., F.R.C.S.E.

(Read to the Medico-Chirurgical Society, 7th May 1862.)

IN the Monthly Journal of Medical Science for the year 1853, I published an account of an epidemic of scarlet fever at Donaldson's Hospital, in which I gave an analysis of 70 cases of that disease; and I now purpose giving a report of 43 cases, which occurred in the same institution towards the end of last year.

Before entering on the statement in connexion with the late epidemic, I may briefly allude to the cases which have occurred during the interval; and it may also be advisable to recapitulate the leading features of the epidemic of 1852, as it was observed in the hospital. That epidemic was of a mild character, and of a remarkably consistent type, being characterized by,—“1st, The almost invariable sickness and vomiting, most frequently of greenish biliary matter; 2d, The invariably injected appearance of the fauces prior to, or ushering in, the febrile symptoms; 3d, The sthenic rather than asthenic type of the fever; 4th, The little tendency to severe head symptoms; 5th, The total absence of the malignant form of the disease; 6th, The mildness of the sequelæ, which for the most part affected the glands and cellular tissue of the neck; 7th, The non-existence of dropsy, or of albuminous urine, whether as a concomitant or sequela.” Such being the characteristics of the fever, they sufficiently account for the absence of any fatal case.

In 1853 and 1854 the hospital enjoyed perfect immunity from the disease; but in 1855, 18 cases were observed. All of these had smart fever, and pretty acute sore throat, but only 7 of them had anything like a distinct eruption, a mere mottling of the surface, as of a reddish colour shining through the skin, and chiefly on the chest, being apparent in the great majority of cases.

In 3 of these cases, albuminuria was observed after the children had been considered convalescent and been permitted to rise. Each of these had laboured under a severe attack of scarlatina, with well-marked eruption.

The fever prevailed from the middle of November to the end of

February, and was supposed to have been imported from town where it was raging, as the children had been permitted to visit their friends three days before the first case appeared.

The cases occurred as follows :—

18th November 1855	. . . .	1 Deaf, mute girl.
23d " "	. . . .	1 do.
24th " "	. . . .	3 { 2 Hearing girls. 1 Deaf mute boy.
25th " "	. . . .	2 Hearing girls.
29th " "	. . . .	1 Deaf mute boy.
8th December	"	2 Hearing boys.
9th " "	. . . .	1 Hearing girl.
10th " "	. . . .	2 Hearing girls.
16th " "	. . . .	1 Deaf mute girl.
23d " "	. . . .	1 Hearing girl.
6th January 1856,	. . . .	1 Deaf mute girl.
5th February "	. . . .	1 Deaf mute boy.
1st March "	. . . .	1 Hearing boy.

Of the 3 cases in which coagulable urine was detected, the following particulars may be noted.

In the first case, M. M., a deaf mute girl, the fever commenced on 23d November, with extreme prostration of strength, a pulse 176 in frequency, and a livid-coloured eruption. In the course of the disease the wrists became swollen and painful. The water was repeatedly examined at this time, but was found natural. On the 18th December, however, when the child was considered convalescent, being up and moving about in the sick-room, her water was observed to be very high-coloured, and when tested by heat and nitric acid was found coagulable. Two or three days afterwards, it was again tested, but the albumen had disappeared.

In the second case of albuminuria, A. M., a deaf mute girl, the disease commenced on 16th December. She had high sthenic fever, pulse 132, and a copious vivid eruption. On 26th December she was allowed to rise. On 31st December she was seized with sickness, vomiting, and fever, with almost complete suppression of urine, only three ounces being passed in the twenty-four hours. This was examined and found highly coagulable. On 5th January the water was found not coagulable; but again, on the 8th and 10th, slight coagulability returned; on the 14th there was only a trace, and thereafter this symptom disappeared.

In the third case of albuminuria, S. T., a deaf mute boy, the fever began on the 5th of February, was of a sthenic type, with a diffuse florid eruption and acute sore throat. Desquamation commenced on the 12th, and was very general over the entire surface of the body; on the 21st the patient was permitted to rise. On the 23d he had headache, and was dull and apparently oppressed. The urine was scanty, not high coloured, and not coagulable; density, 1016. On the 25th he felt better, the urine being more abundant, and its density 1024, not coagulable. On the 28th he

did not feel so well. His pulse was slow and full, sixty-four beats in the minute; his face pale and puffy, and all the morning he had been vomiting pure green bile. There was great tenderness over the liver. The urine was 1018 in density, and very considerably coagulable. He had been costive for two days, and his stomach rejected all laxatives. The symptoms ultimately yielded to blue pill and colocynth. On 4th March he was well, and the urine was free from albumen.

In October 1856 three cases occurred; two boys and a girl. The boys were taken ill on the same day, 2d October, with sickness, headache, slight sore throat, and high fever, and presented the white loaded tongue with enlarged papillæ; one of them had a bright scarlet rash, while the other had no eruption whatever, though the other symptoms were precisely similar. The girl was seized on 4th October, had no sickness, a very slight sore throat, but a copious bright scarlet rash, and a severe eczematous affection of the ears. All the patients did well, and none of them had albuminuria.

From October 1856 the hospital enjoyed complete immunity from the scourge of scarlet fever till the 6th November 1861, when the series of cases, which I shall now bring under your notice, commenced.

I propose giving a short abstract of each case, as it appears to me, that this will be the best way of proving how materially different the epidemic as it occurred in Donaldson's Hospital was, as regards the great majority of cases, from the ordinarily defined varieties of the disease.

CASE 1.—J. D., hearing boy; admitted 6th November 1861, with sickness, fever, and slight sore throat. 7th, Fever very high; pulse 140; eruption appearing. 8th, Mottled, brownish-red eruption; tongue covered with a thick white crust. 9th, Pulse 140; crust on tongue peeling off, exposing very red enlarged papillæ; throat covered with aphthous patches; at other places very red. 11th, Pulse 146; eruption on chest very dark. 12th, Pulse 135. 13th, Skin desquamating in small miliary particles. 14th, Swelling and pain of wrist-joints; pulse 128. 19th, Swelling of wrists gone. 25th, Convalescent. No albuminuria.

CASE 2.—D. W., hearing boy; admitted 7th November. Symptoms exactly the same as the first, only milder. 14th, Pulse 110; wrists swollen and painful. 18th, Convalescent. No albuminuria.

CASE 3.—J. M., deaf mute girl; admitted 7th November, with slight sore throat, foul tongue, headache, and high fever. 8th, Mottled, dark red eruption. 9th, Skin beginning to desquamate, with miliary bloody points; fever still high. 10th, Fever very high; pulse 150. 11th, Pulse 144. 12th, Pulse 132. 13th, Pulse 108; much better, tongue very raw. 14th, Pulse 96; swelling of wrists, and of one foot above the toes. 16th, Swelling gone. 18th, Convalescent. No albuminuria.

CASE 4.—W. A. D., hearing boy; admitted 10th November, with bright scarlet eruption; throat and tongue very red, without aphthæ; fever not high; pulse 100. This boy is of weak intellect, and is constantly whistling or singing. 16th, Convalescent. No albuminuria.

CASE 5.—B. D., hearing girl; admitted 15th November, with fever and slight sore throat; no eruption visible. 16th, After warm bath slight mottling of skin on chest; pulse 96. 18th, Convalescent. No albuminuria. 1st

December, Sent down to school. 5th January 1862, Re-admitted, with sore throat and fever. 6th, Pulse 100; tongue white, with much enlarged papillæ; roseolar eruption on chest. 7th, Violent epistaxis this morning; pulse 120; tongue now brownish-red at sides, with enlarged papillæ. 9th, Fever abated. 12th, Convalescent. No albuminuria.

CASE 6.—J. C., housemaid; admitted 18th November, with rigors and sore throat, which she has had for two days. Fever very high; pulse 150; rose-coloured blush on skin, chiefly on the face and arms; throat very painful. 19th, Fever abated; pulse 120; eruption disappearing; left tonsil much inflamed. 23d, Much better. 29th, Abscess in tonsil. 6th December, Convalescent.

CASE 7.—A. S., hearing boy; admitted 22d November. This boy complained on the morning of the 18th of slight sore throat; he had no fever, and his tongue was quite clean. When I saw him at visit he said his throat was better, so he was sent down stairs again. Since then he has been out playing in wet snow, and to-day he is sent up with general œdema, but more particularly of the face and hands. His throat is now very painful and congested; urine scanty, density 1020, coagulable; breathing much oppressed. 23d, Breathing easier. 25th, Urine still coagulable; swelling diminishing. 28th, Pulse and breathing natural; swelling of limbs gone; urine, density 1010, still coagulable, but less so. Face still puffy. 7th December, Convalescent; no trace of albumen.

CASE 8.—J. M., deaf mute girl; admitted 23d November, with sore throat and slight fever; indistinct, pale pinkish blush on chest; eyes suffused. 29th, Convalescent. 5th January 1862, Re-admitted with sore throat, but no fever. 7th, Convalescent. No albuminuria.

CASE 9.—A. D., hearing girl; admitted 23d November, with headache, sickness, and rigors; no sore throat and no eruption; pulse 132. 25th, Fever very high; pulse 150; face flushed; eyes suffused; tonsils swollen, but not painful; tongue covered with white fur, through which large papillæ are peeping. 26th, Pulse 130. 27th, Fever abated; pulse 108. 29th, Cuticle desquamating. 8th December, Convalescent. No albuminuria.

CASE 10.—C. H., hearing boy; admitted 24th November, with headache, fever, and slight sore throat, pain of one knee-joint, with swelling. 26th, Pain and swelling of other knee; fever not so high. This boy was under treatment for acute rheumatism about a year and a half ago. 30th, Fever gone, still slight pains in limbs. 4th December, Convalescent. No albuminuria.

CASE 11.—J. W., deaf mute boy; admitted 24th November, with headache, sickness, and smart fever; throat slightly inflamed; tongue white, with enlarged papillæ. 27th, Pulse 120; no eruption. 29th, Convalescent. 4th January 1862, Re-admitted with slight sore throat and high fever; reddish mottling of chest; eyes heavy; tongue loaded. 6th, Eruption faded. 12th, Convalescent. No albuminuria.

CASE 12.—E. S., hearing girl; admitted 22d November, with headache and high fever; no sore throat and no eruption. 28th, Convalescent. 5th December, Re-admitted with high fever, sickness, headache, and sore throat; at present has rigors; pulse 134; skin on chest rose-coloured. 6th, To-day the skin on the belly and lower part of chest has a peculiar papular eruption on it, consisting of little rose-coloured circles of various sizes, with sound skin inside. The skin is not raised at all; the eruption, as it were, rather shining through it than actually on it. 7th, Eruption completely disappeared. 9th, Convalescent. No albuminuria.

CASE 13.—E. M., deaf mute girl; admitted 26th November, with high fever, eyes suffused, headache, and sore throat. 27th, Fever moderated; pulse 114; tongue white, with enlarged papillæ; slight mottling of skin on chest. 28th, Pulse 120. 10th December, Convalescent. No albuminuria.

CASE 14.—S. S., hearing girl; admitted 27th November, with headache, slight sore throat, and loaded tongue; pulse 120. 28th, Pulse 120; very indistinct appearance of mottling on chest and calves of legs. 6th December, Fever abated. 10th, Convalescent. No albuminuria.

CASE 15.—C. D., hearing girl; admitted 9th December, with slight fever, sore throat, and roseolar eruption on chest. 10th, Eruption still out on chest, and slightly also on face; throat much swollen. 11th, Eruption gone; pulse 110. 12th, Fever gone. 16th, Convalescent. No albuminuria.

CASE 16.—M. C., hearing girl; admitted 10th December, with headache, but no sore throat; slight roseolar eruption on chest; pulse 114. 12th, Fever abated. 16th, Convalescent. No albuminuria.

CASE 17.—M. M., hearing girl; admitted 12th December, with sore throat and mottled roseolar eruption on chest; tongue foul; fever slight. 18th, Convalescent. No albuminuria.

CASE 18.—J. D., warden; admitted 28th December. Has had sore throat for some days; throat now very acutely inflamed, with much swelling, chiefly of left tonsil and side of palate; fever very high; slight spotty eruption on chest. 29th, Fever much abated; tongue covered with aphthæ. 10th January 1862, Convalescent. No albuminuria.

CASE 19.—A. J. T., hearing girl; admitted 2d January, with high fever and mottled eruption on chest, not very distinct; scarcely any sore throat; tongue white with enlarged papillæ; pulse 134. 3d, Pulse 134; throat injected and spotty. 4th, Pulse 108. 7th, Pulse 72. 10th, Convalescent. No albuminuria.

CASE 20.—M. A. R., hearing girl; admitted 2d January, with high fever and headache, but no sore throat; skin on chest slightly mottled. 5th, Fever abated. 10th, Convalescent. No albuminuria.

CASE 21.—M. M'K., deaf mute girl; admitted 2d January, with high fever, but scarcely any sore throat; slight mottling of skin on chest; pulse 120. 5th, Skin still mottled; pulse 110. 8th, Pulse 102; eruption gone; tongue very foul, covered with a brown fur, with enlarged papillæ. 10th, Convalescent. No albuminuria.

CASE 22.—J. P., hearing boy; admitted 2d January, with high fever and suffused face. 3d, Slight mottling of chest; fever abated, the boy having sweated very profusely. 5th, Convalescent. No albuminuria.

CASE 23.—T. F., hearing boy; admitted 3d January, with slight fever and sore throat; no eruption; tongue white, with enlarged papillæ. 5th, Convalescent. No albuminuria.

CASE 24.—J. F., hearing boy, brother of the last case; admitted 4th January, with high fever, smart sore throat, and the characteristic tongue. 5th, Slight mottling of chest; throat swollen; fever abated; pulse 80. 10th, Convalescent. No albuminuria.

CASE 25.—A. J., deaf mute girl; admitted 4th January, with high fever, sore throat, and slightly mottled chest, very indistinct; pulse 108. 5th, Pulse 82; throat injected and spotted. 10th, Convalescent. No albuminuria.

CASE 26.—M. D., hearing girl; admitted 4th January, with sore throat and fever. 5th, Pulse 124; throat slightly injected; tongue covered by brownish fur, with enlarged red papillæ at side and tip; mottling on chest. 7th, Pulse 92. 12th, Convalescent. No albuminuria.

CASE 27.—S. R., hearing girl; admitted 5th January, with sore throat, brown tongue, and enlarged papillæ; mottling on chest, and red spots on fauces; fever high; pulse 124. 6th, Pulse 132. 7th, Pulse 102; mottling on chest now of a pale brownish-pink hue. 8th, Pulse 104. 10th, Pulse 96. 15th, Convalescent. No albuminuria.

CASE 28.—C. M., hearing girl; admitted 6th January, with headache; no sore throat, but a distinct patchy roseolar eruption on chest; pulse 120; tongue white, furred, with enlarged papillæ. 7th, Pulse 90; eruption gone; profusely sweated by the vapour apparatus. 15th, Convalescent. No albuminuria.

CASE 29.—J. M., hearing girl; admitted 6th January, with slight sore throat, and a very slight appearance of patchy eruption on chest; fever very high; pulse 140; vapour apparatus employed. 7th, Fever much abated; pulse 105; eruption gone. 8th, Pulse 116; irregular. 9th, Pulse 108; again regular; 12th, Pulse still frequent; but she is well in other respects. 20th, Convalescent. No albuminuria.

CASE 30.—J. S., hearing boy; admitted 6th January, with headache, sore throat, and high fever; vapour apparatus to be employed, and the cooling mixture given at intervals. 7th, Pulse 104; throat slightly injected; no trace of eruption. 8th, Pulse 96; better. 9th, Has been vomiting all the morning; very weak; to get some sherry. 10th, Last night this boy was very ill, having had frequent vomiting, his pulse being very feeble, and with intense pain in the head; there were also distinct subcrepitant râles over the whole chest, but more especially on the left side; the pulse was irregular; and at times the boy became very cold, and seemed to be sinking; a mustard blister was applied to the chest; bismuth in large doses was tried to allay the vomiting; and brandy in frequent small quantities was prescribed; the vapour-bath was again applied to the trunk and extremities, producing profuse diaphoresis; his head was much relieved by this application, but the sickness continued; pulse 92; very weak; the bronchitic affection has entirely disappeared, and his breathing is now quite easy; to-day a large mustard poultice is to be applied to the belly, and the brandy and bismuth are to be continued. 9 P.M., Feels much better; has been only once sick, and has retained a cup of strong coffee; pulse, 96. 11th, A change for the worse again took place last night about midnight, the boy becoming violently delirious, the pulse very rapid, and the sickness recurring; he frequently gave utterance to most discordant screams; to-day he complains much of pain over the temples; pulse 140; he is very restless, and occasionally delirious; head to be shaved, cold applied, and the vapour-bath to the lower extremities. 8 P.M., No better; almost quite insensible, but can be roused; gives frequent utterance to very peculiar screams; pulse 145; a fly blister to be applied to the head, and five drops of the tincture of capsicum to be given when the delirium is high. 12th, Slightly better to-day; fever not so high; now much quieter; has had four doses of the capsicum; pulse 118; bowels to be moved by injection; urine thick, but abundant; density 1025; no trace of albumen; he has been fed on beef-tea, and milk mixed with lime-water, which remained on the stomach. 8 P.M., More delirious; would not permit anything to pass his lips all the afternoon; pulse now weak, 100; almost quite unconscious; extremely restless, and constantly screaming; pupils natural. At 11 P.M. he became quieter, but shortly after midnight breathed his last.

CASE 31.—A. C., deaf mute boy; admitted 7th January, with high fever; foul and dry tongue, red at tip and sides; has been vomiting; throat slightly injected; skin on chest very slightly mottled, but barely perceptible, as he is much marked by small-pox; pulse 142, weak; to have the vapour apparatus applied. 8th, Profusely sweated; has been delirious all night; now quieter; pulse 92; tongue brown, and very dry; no eruption now perceptible; has had severe attacks of vomiting; urine abundant. 9th, Last night the delirium again became excessive, and he was very violent, giving utterance also to the same sort of screams as were observed in the last case; the vomiting resisted every method tried to arrest it; at half-past three this morning he became quieter; but at half-past six was found by the nurse to be dead, having breathed his last without any perceptible struggle; this was the biggest and strongest boy in the hospital, and during his residence there he had been remarkably healthy.

CASE 32.—A. R., hearing girl; admitted 7th January, with high fever, and a distinct mottled eruption on the chest and abdomen; throat very slightly affected; eyes suffused; tongue white, with enlarged papillæ; pulse 124; was sent to the sick-room in the middle of October, and lay for five days with a mild form of the same symptoms, but no eruption then perceptible. 9th, Eruption well out, but only on the chest; a thick white fur on tongue, peeling off in some places, leaving a bright red, raw surface, with enlarged papillæ. 10th, Eruption now involving legs and arms; pulse 112. 12th, Desquamation commencing, leaving red, bloody-looking miliar points; urine, density 1009; no traces of albumen. 15th, Pulse 72. 20th, Convalescent. No albuminuria.

CASE 33.—J. M., hearing girl; admitted 7th January, with high fever,

sore throat, and a very indistinct mottling of chest; eyes suffused. 8th, Pulse 116. 10th, Fever abated. 15th, Convalescent.

CASE 34.—M. A., deaf mute girl; admitted 7th. January; sick and vomiting; cold; pulse weak, 120; throat very slightly affected. 8th, Pulse 126; hardly any trace of eruption. 9th, Pulse 120. 12th, Pulse 126. 18th, Convalescent. No albuminuria.

CASE 35.—C. M., hearing girl; admitted 8th January, with sickness and headache, but no sore throat; no eruption; pulse 114; tongue white, with enlarged papillæ. 9th, Pulse 114. 10th, Pulse 100. 15th, Convalescent. No albuminuria.

CASE 36.—J. O., hearing girl; admitted 8th January, with sickness and vomiting; fever moderate. 9th, Pulse 108, very weak; eyes suffused; no eruption apparent. 10th, Pulse 100. 15th, Convalescent. No albuminuria.

CASE 37.—G. M., deaf mute girl; admitted 9th January, with sickness and sore throat; eyes suffused; face flushed; no eruption visible; not much fever. 10th, Fever high; pulse bounding, 108; slight mottling of chest; throat very slightly affected. 12th, Fever abated. 15th, Convalescent. No albuminuria.

CASE 38.—J. P., deaf mute girl; admitted 10th January, with sickness, headache, but no sore throat, and no eruption; pulse 120. 12th, Pulse 100; tongue white with enlarged papillæ. 13th, Very slight appearance of mottling on chest below the skin; fever much abated; pulse 88; tongue very foul, covered with dirty white fur. 15th, A little more distinct appearance of mottling on chest; tongue loaded with brownish-white fur, red at tip and edges, with enlarged papillæ; no fever whatever; pulse 72. 20th, Convalescent. No albuminuria.

CASE 39.—A. T., hearing boy; admitted 10th January, with slight sore throat, slight fever, and no eruption. 14th, Tongue brown, dry, and red at sides and tip; fever moderate. 15th, Pulse 82. 17th, Convalescent. No albuminuria.

CASE 40.—E. S., hearing girl; admitted 12th January, with slight sore throat, and fever. 13th, Fever not high; Pulse 108; skin moist; throat slightly injected, not painful; no eruption. 15th, Convalescent. No albuminuria.

CASE 41.—J. W., hearing boy; admitted 12th January; deadly sick, but not vomiting; intense pain of head, intolerance of light; fever very high; pulse 150; very slight sore throat; no swelling, nor much redness of fauces, merely a few red spots on soft palate; no eruption on skin; to have a bath and cooling mixture. 13th, Profusely sweated by bath, and diaphoresis kept up by the mixture; was very quiet all night; pulse 100, very weak; no trace of eruption; head heavy; much inclined to dose; eyebrows disagreeably contracted; no sickness; vapour apparatus to be applied. Afternoon, Seen in consultation by Dr Andrew Wood; stimulating treatment to be adopted, and the sweating continued; three grains of the carb. ammon. to be given every three hours, and small quantities of brandy occasionally. 8 P.M., Slightly better; pulse 100; 14th, Throughout last night frequently delirious; talking incessantly in a low muttering style; sensible only when roused. After examining the boy this forenoon, and making him show me his tongue, to which he objected in a semi-delirious way, saying he had shown it to me before, and there was no use showing it again, I had gone into the next room, and was in the act of sitting down to write my report, when I was hastily summoned to see the boy, as the nurse thought he was in a fit, and on entering the ward, I found a fearful change had taken place. He was foaming at the mouth; the lips were livid, almost black; the cheeks and eyebrows much the same, but not quite so deep in colour; the pulse very frequent and full; the pupils enormously dilated; the breathing became very slow and laboured, the pulse continuing regular and firm; and within three minutes of the time in which he had spoken to me he was dead, though the pulse was felt beating for fully a minute or longer, I should say, after he had breathed his last. Till within an hour or two of his death he passed plenty of water, never doing so in-

voluntarily, and the urine never containing albumen. *Post-mortem*, twenty-four hours after death. The lips and cheeks were intensely livid; the lungs were extremely congested, but otherwise perfectly healthy; the heart was normal, but pumped out, not a trace of blood or clot in it, save in the right ventricle, where there was a very small insignificant soft black clot. On opening the head, the dura mater was found to be apparently quite healthy; there was no abnormal quantity of fluid in the lateral ventricles, nor in the arachnoid. The pia mater was intensely congested, the smaller bloodvessels being greatly distended by florid blood; the convolutions of the hemispheres were firmly matted together by recent lymph; the covering of the medulla oblongata was especially congested, and the structure of that organ was more than usually soft and vascular. At the base of the brain, about a dessert-spoonful of purulent-looking blood-tinged serum was lying. The kidneys were much congested, especially the cortical substance. The bladder was nearly full, but not distended by water, which was of a natural appearance.

CASE 42.—A. R., one of the male teachers; admitted 19th January, with rigors, headache, and slight sore throat; tongue covered with brownish fur; throat injected, and slightly swollen; pulse 98; slight appearance of eruption on upper part of chest; no trace elsewhere. 21st, Eruption more distinct, extending from chest over upper part of abdomen, consisting of minute pale rose-coloured spots. 25th, Convalescent.

CASE 43. J. S., housemaid; admitted 31st January; has been complaining for some days of sickness and sore throat; fever very high; pulse 130; throat much inflamed; left tonsil much swollen; tongue foul, with enlarged papillæ; front of chest slightly red, but no distinct eruption. 1st February, Fever reduced; pulse 114; throat easier. 5th, Convalescent.

From a perusal of these cases, it may be seen what a strong family type pervades them all. The first four cases had the scarlet rash well defined, as had one or two isolated cases afterwards; but the great majority had only a slight trace of eruption, appearing for a very short time on the chest, while the throat affection was so trivial as not to be noted by some of the patients; and yet the fever, and very characteristic tongue, with the occasional occurrence of more ordinarily well-marked symptoms, removed all doubt from my mind as to the nature of those cases which were otherwise obscure. Case 7, the boy who really had no symptoms whatever of scarlet fever, save a very slight sore throat, so insignificant, indeed, as not to call for any treatment, became, from imprudent exposure, the only illustration of dropsy and albuminous urine among the whole number; and my experience in this case made me more careful in retaining for a lengthened period of time in the convalescent wards all the subsequent cases, however slightly they had been affected by the disease.

The order in which the cases occurred does not throw any light on the mode by which the scarlatina was disseminated among the inmates of the hospital. All that can be said is, that after the New Year's festivities the number of cases increased, and the three fatal events took place; but whether we can justly deduce any inferences therefrom, I leave it for others to determine.

The phenomena of infection are very difficult to recognise, and it is not easy to ascertain the reasons why the cases began to drop in one by one from the 6th of November up to the 27th; that an

interval of twelve days then ensued; that from 12th December, there was an interval of sixteen days; and that thereafter the same regularity, with only increased numbers, was again the order of progression.

On the whole, I am disposed to believe that the infectious matter had taken possession of, or been introduced into, the hospital; that all the inmates were more or less exposed to the noxious influence; and that, according to the extent of their exposure, or the varying protective power of different constitutions, the invasion of the disease was encouraged or held at bay.

I take this view of the matter, because the isolation of the cases, and the rapidity of their appearance, were adverse to the conclusion, that the propagation of the disease was due to direct contact.

The following table gives the dates at which they came under observation:—

Date of Appearance.	No. of Cases.	Date of Appearance.	No. of Cases.
November 6, 1861, . . .	1	Brought forward, . . .	18
" 7, " . . .	2	January 2, 1862, . . .	4
" 10, " . . .	1	" 3, " . . .	1
" 15, " . . .	1	" 4, " . . .	3
" 18, " . . .	1	" 5, " . . .	1
" 22, " . . .	2	" 6, " . . .	3
" 23, " . . .	2	" 7, " . . .	4
" 24, " . . .	2	" 8, " . . .	2
" 26, " . . .	1	" 9, " . . .	1
" 27, " . . .	1	" 10, " . . .	2
December 9, " . . .	1	" 12, " . . .	2
" 10, " . . .	1	" 19, " . . .	1
" 12, " . . .	1	" 31, " . . .	1
" 28, " . . .	1		
Carry forward, . . .	18	Total, . . .	43

In 1852, when 70 cases of scarlatina occurred, the inmates of the hospital amounted to 149; but since that time an increase in the number has taken place, and during the late epidemic, 207 persons—175 children and 32 adults—were resident in the building. Of these I have ascertained that 89 had previously, at some period or other, suffered from scarlatina, while 118 had hitherto escaped from the disease. 10 of the 89 took it a second time, and 33 of the 118 were primarily attacked by the disease. Of the 89, 74 were children and 15 adults; of the 118, 101 were children and 17 adults.

Of the total number of children in the hospital, 99 were boys, 76 girls; 13 of the boys and 26 of the girls took scarlatina. In 5 of the 13 boys and in 5 of the 26 girls it was the second attack. One of the boys suffering from scarlet fever for the second time (Case 41), died of the attack. Of the total number of adults, 13 were males, 19 females: of these, 2 males and 2 females took scarlatina. None of the four could recollect having previously laboured under the disease.

The cases in which the attack of the disease was a second one, were Nos. 4, 17, 23, 24, 25, 26, 33, 34, 39, 41. In only one of these, No. 4, was the ordinary scarlet eruption visible. In three of them Nos. 23, 39, and 41, there was absolutely no eruption; in the others, merely slight mottling of chest. In all of them, however, there was the characteristic tongue, and more or less fever. In two cases, Nos. 34 and 41, extreme sickness was present: in the former terminating in vomiting and prostration, from which, however, the patient soon rallied; while in the latter, the sickness, though not attended by vomiting, was marked by what proved a much more serious symptom,—intense pain of the head, with extremely rapid feeble pulse.

Before leaving the subject of a recurrence of scarlatina, I may draw your attention to two facts,—1st, That my experience shows that when an epidemic of scarlatina breaks out among a large collection of people, chiefly children, resident in the same building, the morbid poison affects with different degrees of intensity a considerable number of those who had previously passed through the disease; 2d, That having previously had scarlatina does not afford absolute protection from a fatal issue to those who a second time suffer from the complaint.

In a clinical essay on scarlatina, published lately by Dr Richardson in the *Asclepiad*, he says, “I take it, nevertheless, that the phenomenon of recurrence is most exceptional; and it is satisfactory to know that I can discover neither in literature nor in general experience one single case in which a second attack has proved fatal.”¹ Case 41 will, I trust, prove that no certainty of immunity from a fatal issue to a second attack exists, though such an occurrence must be very rare, seeing that Dr Richardson, in the course of extensive practice, and after much research, has not met with such a case. I have it on very good authority,—the testimony of his grandmother and aunt,—that a few years ago the poor boy, J. W. (Case 41), who was lately cut off by scarlatina in the hospital, nearly died of the disease, another child in the family also having it very severely. The father and mother being absent in the United States prevents my being able at present to corroborate by their evidence the truth of these statements.

With regard to the frequency of recurrence, the fact of ten out of the forty-three cases enumerated, having previously had the disease, shows that such cases are not so exceptional as has been stated. It may be argued that these second attacks are not true instances of the disease. To such arguments I would say, read the cases of primary and secondary invasion, and then point out what difference, save perhaps in degree, exists between them. I am ready to admit that some of the cases entered as scarlatina, if taken separately, might be denied the privilege of ranking as such; but no one who reads the short notes of all the cases I have jotted

¹ *Asclepiad*, p. 73.

down can, I should think, come to any other conclusion than that they are all instances, in some shape or other, of that multiform disease.

Dr Richardson gives himself as an instance of three attacks of scarlet fever, and I am able, in connexion with the present epidemic, to quote an illustration of the same nature :—

Miss G., when at a boarding-school in Roxburghshire, suffered from a severe attack of scarlatina, which involved many inmates of the establishment. About four months ago, while residing in my house, Miss G. was seized with symptoms precisely similar to those presented by the cases I was attending at Donaldson's Hospital, only the eruption was more vivid, involving the greater part of the body and limbs; the throat was moderately affected, and the fever smart. Convalescence was soon established. About three weeks ago, Miss G. and her maid went to the south-west of England, and two or three days after her arrival she was seized with nausea and sickness, and a vivid scarlet eruption appeared, extending over the face, neck, and chest, and as far as the knees. The fauces were inflamed, the tongue red and furred, and the fever high. The disease terminated a few days afterwards in very general desquamation of the cuticle. The maid had precisely similar symptoms, only milder; and very extensive desquamation took place. This was the servant's first attack. I should suppose the poison was carried from Edinburgh, and that the fever was developed in consequence of fatigue, for there is no epidemic of scarlatina where the parties are now residing. I am indebted to Dr Maidstone Smith (of Exmouth) for the history of their illness.

Dr Richardson has taken great pains to show, from very extensive statistics, that the popular notion of females being more liable to the disease is erroneous; and from his tables we may gather that fully as many males as females suffer from scarlatina. I do not think, however, he has so clearly refuted what my experience at Donaldson's Hospital would lead me to infer, that when a certain number of girls and boys are shut up in one residence, the girls appear to be most susceptible of the disease. Such at least would seem to be a warrantable conclusion, from what I have now witnessed in three epidemics at the hospital.

In 1852 there were 61 girls and 62 boys; of these, 35 girls and 27 boys took the fever. In 1855, the proportion was 12 girls to 6 boys. In the winter of 1861, out of 39 cases there were 26 girls and 13 boys, at a time, too, when the number of boys in the hospital greatly preponderated, there being altogether 99 boys and 76 girls.

From such slender statistics I am not disposed to draw any strong conclusions; but I may perhaps be permitted to throw out the supposition that certain peculiarities in girls as compared to boys, such as their herding more together, their being not so much given to out-door exercises, with perhaps a greater tendency on the part of their dresses to inveigle and store up the morbid poison,

may sufficiently account for their apparently greater susceptibility to attacks of scarlatina.

Were I to attempt, by a comparison of the symptoms, to range the cases I have detailed, under any of the definitions of the varieties of scarlatina given by authors, I should be notably puzzled. Where was the florid eruption of the first variety, the acute sore throat of the second, the sloughing of the textures in the third, or even the scarlatina faucium, or sine exanthemate, of the fourth? The prevailing type of the disease I witnessed was simply fever, the sore throat being almost imperceptible; the eruption, when present, being in nine cases out of ten only a slight mottling on the chest, which would most assuredly have escaped notice, had attention not been specially directed to the appearance of the skin; but the strawberry tongue was an invariable symptom except in the very severe cases, where it assumed more the typhoid character. It may be said that those cases which were characterized by such undecided symptoms, were hardly worthy of being ranked as scarlatina, but yet the three fatal cases to which I now propose directing your attention, began exactly like the milder ones, and did not display, save in their fatal issue, the ordinary features of scarlatina. In none of the three was the characteristic eruption present, in none was the sore throat of any intensity, but in all three the poison appeared to go at once to the brain, causing such a striking similarity of symptoms, that, save in the mere question of the time taken to destroy each, one description would have sufficed for all. The time when these fatal cases occurred is so far remarkable, that they took place while surrounded by the mildest forms of the disease, nor could they be in any way connected with each other, the two first becoming affected on two successive days, and the third only five days thereafter.

That uræmic poisoning was not the cause of death I infer from the fact, that there was no diminution in the quantity of urine excreted, and no apparent change in its character. In only one of the three could a post-mortem examination be obtained; but what was disclosed on that occasion would lead me to conjecture, that much the same appearances would have been brought to light in the others had inspection been permitted. I do not expect ever to witness again such a remarkably pure case of death from apnœa, as my presence in the hospital enabled me to observe, when the boy J. W. so suddenly breathed his last. The appearance of the medulla oblongata may perhaps sufficiently account for the instantaneous suspension of the respiratory functions, and this, by leading to congestion, will explain the enormous dilatation of the pupils which accompanied the change.

A notable feature in the cases I have narrated is the absence of sequelæ. Except in Case 7, which I may call undeveloped scarlatina, no secondary affection whatever was noticed; and, as I have previously mentioned, the dropsical symptoms and albuminuria

would most probably have been prevented, had the boy been confined to the house.

In 1853, when treating of this same subject, I had occasion to protest against the opinion which was then very popular, that albuminous urine was to be found at some time or other in every case of scarlatina. How such a proposition could be entertained for a moment, when contradicted by strong negative testimony, I am at a loss to understand; but within the last few days the same assertion has been made to me, and I look forward with much interest to hear the conclusions to which such a learned Society as the Edinburgh Medico-Chirurgical will arrive.

I did not examine the urine of all my scarlatina patients every day, but it was done very frequently, and I am satisfied that no such critical phenomenon as has been alleged took place. In none of the 43 cases, save in No. 7, which did not show any manifest signs of scarlatina till exposure to the cold and wet of melting snow developed the dropsy, was any albuminuria or dropsy present.

There is surely no need to multiply proof, but I may quote from my previous paper, one authority who was remarkable for the accuracy of his observations. Mr William Wood, who reported on the epidemic of 1836, tells us,—“In Heriot's Hospital, of 45 boys who were attacked by scarlatina, 8 had dropsy and albuminous urine; while at the Merchant Maidens' Hospital, which is closely adjacent, and during the very same period, 21 girls had the fever, but not one of them dropsy or albuminous urine.”

My views with regard to albuminuria may be shortly stated thus:—The kidney complication giving rise to albuminous urine, either as a dangerous sequela, or as a critical evacuation merely, does not necessarily form an item in the train of symptoms which indicate scarlatina, though frequently typical in some epidemics. Three circumstances appear to favour its development, 1st, The intensity of the poison which gave rise to the primary disease; 2d, Predisposition on the part of the patient; 3d, Incautious exposure to cold during convalescence.

Albuminuria has been observed in many varieties of scarlet fever, perhaps more frequently in the mild than in the more severe forms. This can be explained in two ways, either by supposing that the poison had chosen the kidneys as emunctories from the system, or that, owing to the trivial nature of the case, less than ordinary care had been taken in preventing exposure to cold. I am disposed to consider the three cases of albuminuria observed in 1855, as illustrations of the intensity of the poison and predisposition combined. They all had a smart attack of fever, copious eruption, and desquamation of the whole cuticle. They were carefully guarded against cold, but yet kidney derangement came on; and as others, placed in exactly similar circumstances had equally severe symptoms, and no albuminuria, we may fairly infer that there was some predisposition on the part of these patients to a renal infection. No. 7

of the epidemic of 1861 must be admitted to be an excellent specimen of the third class, arising from exposure to cold. Were any good to be gained by multiplying species, it might come under the classification of Dr Copland's fifth variety, "Latent Scarlatina;" for, though the poison must have been in the system, there were no external manifestations till supervening dropsy set the question at rest.

The late epidemic does not afford me much opportunity for suggestions regarding treatment. Most of the cases would probably have done well without any medical interference whatever; but the use of the warm bath, vapour apparatus, and diaphoretics, seemed to increase the comfort, and sometimes to diminish the fever of the patients. The fatal cases were cut off so rapidly, and appeared so little amenable to treatment, that I can make no proposal for a change in the remedies ordinarily employed on such occasions.

The attempt to promote profuse diaphoresis did not prove of much value in the three cases where the head symptoms became so fatally prominent. A theory, which at one time was very popular, has long since ceased to have much weight with me,—viz., that a badly developed eruption is likely to lead to a dangerous head complication. Were such a theory true, we should most certainly have expected a much greater proportion of the cases reported to have suffered from cranial derangement, for a copious eruption was the exception not the rule, and no amount of applications to the skin seemed to favour its induction. This was very different from what I observed in 1852 and 1855, more especially in the former year; for the use of the warm bath was then a most powerful auxiliary, helping to bring out an extensive florid eruption, and wonderfully diminishing the intensity of the fever.

In the late epidemic, the use of the vapour apparatus was occasionally found to alleviate the feverish symptoms, although it had no effect in promoting the appearance of the eruption; but I thought that in some cases it materially weakened the strength of the children.

I have been induced to bring these cases under the notice of the Society, because this city during last winter passed through a serious epidemic of scarlet fever, and judging from what I myself witnessed in private practice, and from what I have heard from others, I believe that the cases at Donaldson's Hospital do not illustrate the prevailing form of the epidemic as it was observed in town, and they certainly do not appear to me to be examples of any of the ordinary varieties of the disease.

When compared with the two former epidemics I have described, a marked resemblance to that of 1855, as regards at all events the scanty ill-defined eruption, can be pointed out; and while it differs from that of 1852 in the character of the eruption, which was very bright and comparatively constant, they resemble each other closely in the absence of dropsy and albuminuria.

ARTICLE II.—*Case of Inversion of the Uterus occurring Spontaneously Eighty Hours after Delivery.* By CHARLES COWAN, L.R.C.P.E., and L.R.C.S.E., Melrose.

(*Read before the Edinburgh Obstetrical Society, 19th March 1862.*)

INVERSION of the uterus is one of the most formidable accidents which can happen to a woman, and I am certain that this statement will be confirmed by every practitioner who has had the misfortune to meet with an example of the lesion.

It is fortunately of rare occurrence; so that many medical men in the whole course of their lives have not an opportunity of meeting with it, and the literature of the subject is in consequence comparatively deficient. When a case does occur, however, it cannot fail to make a lasting impression on the mind of the physician, and should urge him to investigate the subject to the utmost extent that circumstances will permit.

When we consider the fearful results of such a casualty—death from shock, or hæmorrhage, or from both combined, sometimes within a few minutes, and the misery and suffering to which those are subjected who survive its immediate consequences—it must be apparent that a great necessity exists for publishing all cases of the kind, in order that the causes, pathology, and treatment of the affection may be thoroughly elucidated.

According to the various writers on the subject, inversion may occur immediately after delivery, a few days after parturition, or, in the non-puerperal state, it may take place very gradually from the presence of a foreign body in the uterus.

The causes of inversion are said to be numerous, such as traction of the cord while the placenta is still adherent, a short cord, the cord being twisted round the child's neck, a large heavy placenta with inertia of the uterus, etc. The first of these is affirmed to be the principal cause of inversion, the others by the majority of authorities are considered to be more fanciful than real.

Mechanical violence, however, though apt to be blamed for such an occurrence, is not always the cause of inversion, as it has been clearly established by Dr Radford, that it may occur spontaneously—that is to say—that it may depend upon some morbid action taking place in the uterus itself over which the surgeon has no control, and that this may happen not only immediately after delivery, but after an interval of some days. Many physicians are sceptical regarding this theory; but if any of these gentlemen had had the opportunity of observing the progress of the case I am now about to relate, their doubts would have been at once dispelled.

Mrs T., æt. 40, a lady who had always enjoyed good health, was delivered with the forceps, after a pretty smart labour of twenty-four hours' duration, of her first child, a strong healthy boy, at 4 A.M. on Thursday the 15th November 1861. The placenta was

found in the vagina ten minutes afterwards and removed. In about half an hour there was slight hæmorrhage, which was easily restrained by the application of cold to the pubic region, which caused the uterus to contract firmly: a little brandy was likewise administered, as I attributed the hæmorrhage to the weak state of the patient, occasioned by the protracted labour, and by my efforts to accomplish delivery with the forceps, which occupied me more than half an hour.

I remained with her an hour longer; and to satisfy myself that all was right I removed the bandage, and, on manipulating the abdomen, I discovered the uterus firmly contracted, about the size of a cricket ball, in its normal situation. The bandage having been replaced I administered a dose of morphia and took my leave. 10 A.M. Has had some sleep, feels comfortable, pulse 92; had tea and toast for breakfast. Vespere, same as morning; has had the child at the breast, and is quite happy. 16th, 10 A.M., Pulse 88; had a good night, lochial discharge natural, milk in the breasts. She enjoyed her breakfast, and requests something substantial for dinner; allowed beef-tea. Ordered dose of castor-oil to be taken in the morning. 17th, 11 A.M., Took castor-oil at 5 A.M., which has produced free evacuation of the bowels; pulse 84; breasts distended with milk; lochial discharge natural. She was ordered chicken-soup for dinner, and a soft-boiled egg for breakfast to-morrow morning. Patient expressed herself as feeling so well to-day, that her sister, who had been residing with her since her confinement, determined to return home and leave her to the care of the nurse. 18th, 11 A.M., Pulse 84; in every respect going on favourably. Her sister left yesterday. As patient insists on having something to eat, she was ordered a chop for dinner. She threw out a hint about getting up, but was, of course, prohibited. About 6 P.M. I got a message requesting me to visit Mrs T. immediately, as she was not so well. From her appearance in the morning I was scarcely prepared to find such a change as was now presented. Her face had an anxious flushed expression. Her pulse had risen to 112, but her skin was cool,—rather cold in fact. She complained of palpitation, sickness, and a tendency to vomit.

On inquiring both from herself and the nurse if they could assign any reason for this change, I could discover nothing to account for it. I therefore attributed it to derangement of the stomach from her having partaken of a chop, and prescribed half an ounce of castor-oil immediately, to be followed by forty drops of morphia as soon as the bowels were opened. 19th, 8 A.M., Has passed a miserable night. Pulse 130, and very weak; bowels freely moved, but no alleviation of the symptoms. She slept for a few minutes occasionally after the morphia. Is sometimes incoherent, and fancies she see strange faces in her bed-room. On being asked concerning the discharge, she says that "It is all right,"—a statement corroborated by the nurse. She also says that she is entirely free

from pain. Has no appetite and some thirst. She was ordered a raw egg with half an ounce of brandy immediately, chicken soup, half an ounce of wine with twenty drops of morphia every four hours. 3 P.M., Much the same as in the morning. To continue the wine and morphia. 10 P.M., Pulse still 130, and very weak; has slept a few minutes at short intervals, but has been wandering a good deal.

On applying pressure to the abdomen there is no tenderness, and the nurse informs me that the discharge is natural in quantity. The atmosphere of the room, however, is slightly tainted; and on inspecting a napkin, the odour arising from it is anything but agreeable. I now requested to be allowed to examine Mrs T.; but was refused, as she asserted that there could be nothing wrong there. I consequently had to content myself with ordering the nurse to syringe the genital canal with some tepid water. The bladder, I was given to understand, was freely evacuated several times daily. She was ordered another egg and brandy. To continue the wine every three hours, and the morphia every four hours as formerly.

Being called to a midwifery case during the night, I was unable to visit Mrs T. until 4 P.M. on the 20th, when I found all the symptoms aggravated. The pulse was about 150, very weak and thready—one beat running into the other—what, in fact, might be termed a wavy pulse. The fœtor of the lochial discharge was now so very offensive, that I had a strong suspicion that there existed either in the uterus or in the vaginal passage, some clots in a state of putrefaction. Accordingly, being exceedingly anxious about the safety of my patient, I insisted on an examination. On introducing my finger into the vagina, I found that passage occupied by a foreign body. I had at first great difficulty in satisfying myself as to its nature. It was of too firm consistence for a clot; it was not a polypus; it was not a fibrous tumour. On further examination, I came in contact on one side of it with that peculiar sort of rough surface, which is felt on scraping off an adherent placenta. The mystery was now solved. The tumour was the uterus itself, the rough surface the part of it to which the placenta had been attached, in other words inversion of the uterus had taken place.

The next question which occurred to me was the means by which this state of matters had been brought about. I knew it would be useless to make any direct inquiry for the purpose of eliciting information on this point. I had, therefore, recourse to stratagem, and having sent the nurse out of the room, I said to the patient rather abruptly, "You have been out of bed." She at once admitted the fact, and said that after my visit on Sunday, being desirous of ascertaining her strength, she sent the nurse down stairs on some trifling errand, and during her absence had hurriedly jumped out of bed, walked rapidly to the fireplace, and dropped into a chair completely exhausted. After sitting a minute or so, she made an effort to rise

and return to bed, but was unsuccessful, and the nurse just arrived in time to prevent her from falling out of the chair in a fainting fit. Having learned so much, and hearing the nurse ascending the stairs, I left the room and intercepted her in the lobby.

"Now, nurse," I said, "why did you not inform me of this?" The nurse repeated Mrs T.'s statement, and concluded by saying that with some difficulty she got her into bed, and gave her a little wine, which caused her to rally somewhat; after which, Mrs T. had strictly forbidden her to mention the occurrence to me.

Consequently, the inversion was not discovered until the alarming symptoms compelled me to insist on an examination. I immediately communicated to Mr T. the serious nature of the case, and my fears as to the result, and at the same time suggested a consultation, which was at once consented to.

Professor Simpson was accordingly telegraphed for, and arrived in about three hours. On examining the patient, the professor confirmed my diagnosis. The patient was accordingly placed under chloroform, and in a short time, with little or no difficulty, Dr Simpson succeeded in returning the uterus to its normal position. At this time the pulse could not be counted, and it was only by placing the stethoscope over the cardiac region, that we could form an idea of the rapidity of the circulation.

She was ordered a large dose of morphia and wine, to be repeated every hour.

21st.—7 A.M. Professor Simpson visited her with me. We found that she had slept some, and the pulse was a little better. She felt more comfortable. Ordered to continue the morphia and wine, and to have as much nourishment as she can take.

To give the details of this case until recovery took place, would occupy too much time, and would besides be unnecessary. Suffice it to say that, by the liberal administration of stimulants and sedatives, with the most nourishing kind of food, Mrs T. steadily, but slowly approached convalescence. Six weeks elapsed, however, before she could leave her bed, and it was some months ere she could attend to her household duties. Now she enjoys perfect health.

On reviewing the history of this case, it will be seen that it is not difficult to discover the period when the uterus became inverted.

For the first three days after her confinement, we have the patient giving the most satisfactory evidence of speedily attaining convalescence. The pulse becomes natural; the appetite returns; the secretions are normal; the breasts are distended with milk, and the mother rejoices in the prospect of being able to nurse her child. Her sister finding her so well on the Saturday afternoon (two days and a half after delivery), returns home, and on the Sunday the patient expresses a wish to get up. What could be more gratifying than this? What could more strongly indicate a rapid restoration to health? So far it appears that all is well; but on Sunday at mid-day, about eighty hours after delivery, a change

takes place. Eager to test her strength she leaps out of bed, comes to the ground with some degree of violence, staggers to the fireplace, and falls into a chair in a state of syncope.

There had undoubtedly been mischief, and that of no light character, for from this moment a train of symptoms of the most alarming description followed, becoming hourly more and more serious until the cause was discovered in the inversion of the uterus, and replacement was accomplished. She now again began to show some slight signs of amendment, and we cannot but conclude that the inversion was occasioned by the hurried leap out of bed, especially as the unfavourable symptoms presented themselves then for the first time; and we have further proof of this in the amelioration of these symptoms, commencing almost as soon as the displacement of the uterus was reduced.

As I have now, I think, sufficiently proved that there was no inversion until the Sunday, and that it then occurred spontaneously, I will not extend my remarks any further.

I have considered it my duty to bring the case before the profession as a remarkable instance of an accident which may occur without any interference on the part of the surgeon, and even during his absence, but which may very unjustly be attributed to rashness or carelessness on his part.

MELROSE, *March* 1862.

ARTICLE III.—*Statistics of Prisoners: Cases of Homicidal Mania.*

By J. B. THOMSON, L.R.C.S. Edin., Resident Surgeon, General Prison for Scotland, Perth.

No. VI.

IN Scotland all cases of Homicidal Mania resulting in homicide are committed for custody to the Lunatic Department of the General Prison, there to be detained during Her Majesty's pleasure. Since October 1846, all such (with only one or two exceptions) have been so disposed of; so that those who now survive have been for several years under my special charge, and opportunities belonging to few have been thereby afforded me for the study of this the most important of all the forms of mania.

The number of cases of homicidal mania, in which the offence charged was murder, admitted here, from October 1846 until 31st December 1861, amounted to 24, and of these I propose to make an analysis in this paper. For the last ten years the admissions have been exactly 12, or 1¹ per annum, which will be a very near approximation to the annual average of this class of cases over Scotland. I consider a series of cases, grouped around a subject so mysterious as this, to have all the value of a treatise upon the malady. Only from what we know of the particular manifestations that *have been* can we presume as to what *may be*; and the evidence

of the nature of some cases is often *probable or possible* rather than demonstrative. Imperfect, therefore, as the information in some of my cases is, I feel that they may be useful in adding somewhat to our knowledge of a mental malady rare in its occurrence, mysterious in its nature, and tragic in its consequences. There is no other form of mania that involves questions of moral responsibility so difficult to solve, and results so important to the individual and to the social welfare of humanity.

I preface my details of the cases and remarks by a table, chronologically arranged, of all the cases of homicidal mania in which the act charged was murder, and admitted to the Lunatic Department of the General Prison for Scotland from 15th October 1846 until 31st December 1861, with their ages and sex, dates of admission, results, etc.

Cases of Homicidal Mania followed by Homicide.

Name.	Age and Sex.		Dates of Admission.	Results.		
	M.	F.		Liberated.	Died.	Remaining.
A. S. or S. . . .	35	...	Dec. 10, 1846	...	1	
E. L. . . . .	...	35	" 29, "	...	...	1
P. C.	42	...	Feb. 5, 1847	...	1	
A. M'I.	33	...	" 6, "	...	1	
G. W.	44	...	April 1, "	...	1	
T. M'K.	37	...	May 4, "	...	...	1
J. M.	67	...	" 14, "	...	1	
J. D.	35	...	Sept. 20, "	...	1	
J. A. or R. . . .	...	39	April 5, 1849	1		
P. P. or S. . . .	50	...	March 29, 1850	...	...	1
W. J.	50	...	May 29, "	...	1	
W. K.	22	...	June 18, "	...	...	1
J. B. . . . .	...	50	May 14, 1852	...	...	1
J. J. or S. . . .	...	35	Oct. 12, "	1		
J. D. or D. S. . .	24	...	March 18, 1853	...	...	1
A. M. . . . .	...	35	Aug. 21, 1855	...	1	
M. F. or M'L. . .	...	28	July 15, 1856	...	...	1
H. S.	27	...	Feb. 19, 1857	...	...	1
A. M'P.	26	...	Dec. 21, "	...	...	1
D. C.	37	...	July 30, 1858	...	...	1
T. A. S. or T. F. .	39	...	Aug. 14, "	...	...	1
A. M.	23	...	Feb. 22, 1859	...	...	1
E. P. or M. . . .	...	38	Oct. 26, 1860	...	...	1
A. M'K. or M'G. .	...	28	May 24, 1861	...	...	1
	16	8		2	8	14

The foregoing table indicates the liability of the male sex to homicidal mania to be twice as great as that of the female,—the number of males being 16, of females, 8. This I find to be the case with the criminal lunatics of Scotland generally. The maximum age of liability was betwixt 30 and 40, which differs from that of criminal lunatics, in whom the critical period appears to be from 20 to 30 years of age.

It may be safely stated that the social status and educational and moral condition of these prisoner-patients is above that of other prisoners; and the fact is a valuable one, that *not an individual belongs to what are called the criminal classes or the dangerous classes.* In contradistinction, also, to the acts of criminals, the homicides were all committed *without any associate or accomplice*, and in *no case was there any attempt to deny the act of homicide, or to escape detection.*

Referring to the table, we see that two only have been liberated: one was a case arising from puerperal mania, and in the other, the medical certificate accompanying the patient on admission, states *delirium tremens* to have led to the insane act. This woman was quite sane all the time she was here, from 8th September 1852 till 18th December 1856,—more than four years; and from this we may infer that her insanity, which was proved in the bar of trial, must have been induced by alcoholic stimulants acting upon a brain pre-disposed to mania. Of the existence of such cases I do not entertain the slightest doubt. Whether such a person is fit and safe to be at large may be disputed.

There have been 8 deaths, among these 24 homicidals; and the causes of death may be interesting to the materialistic and un-materialistic schools of psychology. That physical disease of the brain is not always seen in those who die insane is well-known. But this is no proof that disorganization does not exist. Our scalpels and our microscopes may fail to discover and to declare any lesion, yet it may be there. In none of these 8 cases was there any proof of organic disease of the brain as the cause of death. The causes reported by the surgeon were as follow:—

3	died from gradual decay.
1	“ diarrhoea—worn out.
1	“ diarrhoea—atmospheric.
1	“ dropsy—worn out.
1	“ heart disease.
1	“ phthisis.

The length of time after admission when these patients died is worthy of notice, and pertinent to the question as to organic disease of the brain being a cause of insanity.

Length of confinement before death:—

From 3 to 4 years	.	.	.	.	.	3
“ 8 to 9 ”	.	.	.	.	.	2
“ 10 ”	.	.	.	.	.	1
“ 11 ”	.	.	.	.	.	1
“ 13 ”	.	.	.	.	.	1

In none of the homicidal maniacs under review does there seem to have existed any marked physical disorder; and on admission I find that they were all certified to be in good health. The 14 who remain I consider to enjoy physical health fully above the average of prisoners.

As is not uncommon with homicidal mania, more than the death of one person followed the homicidal attacks. One person killed

three in one night, and another two. The homicide of the three had made attempts on other two individuals ; and in two other cases besides accomplishing one murder, others were also attempted. By these 24 homicidal maniacs the murder of 27 persons was completed, and it is known that 31 were attempted, and many more were threatened and meditated.

The victims were in most cases relatives of the unhappy homicidal maniacs' fury, and the following deaths were involved in the cases under notice :—

- 5 children were killed by their mothers.
- 3 " fathers.
- 3 mothers were killed, two by daughters and one by a son.
- 1 father by his son.
- 3 sisters by brothers.
- 1 brother by a brother.
- 1 aunt by a nephew, and 1 grandmother by her grandson.

One wife was attempted to be murdered by her husband, but the person who interrupted the maniac suffered death. In other cases were two friends, and in another a social companion. Out of 27 deaths there were 18 nearly connected by consanguinity with the homicidal maniac.

Suicidal attempts manifested themselves unsuccessfully in at least 5 of these homicidal patients, in several immediately after the completion of the deed.

In homicidal mania we may have instances of *cherished hatred, premeditation, and design*. This is evident in 3 cases.

A. M'P. lay in wait in the chapel to murder a priest, and rose repeatedly intending to murder his brother, and failed to complete it. P. P. or S. concealed himself in the house of his victims until they went to bed, and rose and murdered Dr W. and his mother ; this man is known to have had vindictive and malicious feelings towards the doctor for having certified him insane. W. J. cherished hatred towards his brother, and stabbed him with a knife which he had concealed about his person, and which he had sharpened and prepared for the murder. Yet in all these cases there was clearly mania, and this was especially seen in the circumstances of each case. In none of the instances was there any attempt at concealment of the act after it was accomplished, nor any attempt at denial or escape.

The *causes* of homicidal mania are very obscure in these cases. Of the *physical causes*, I only know that hereditary mental disease existed in 5 cases. The puerperal state was the cause in 2 cases, and intemperance had something to do with 5.

The *moral causes* have not been more developed. In 7 cases there were distinct delusions ; and in 1 case there was a morbid love of talking about and reading desperate deeds, as was noticed in the case of Burke, Hare, Rush, and others ; the same patient had seen two persons hanged in his youth, which seems to have impressed upon his mind a sense of fiendish interest and even satis-

faction; and I have no doubt his act was induced by the tendency to *imitate* the conduct of heinous murderers.

Two most interesting cases appear in which there were *relapses* of a homicidal paroxysm, sudden and irresistible, which passed off transitorily as at the first; and when the homicidal impulse was over, the mind was soon restored to a condition of almost entire sanity, so far as symptoms were concerned.

Looking at the cases before me of homicidal mania, I find that they differ much in regard to the condition of mind and the phenomena preceding or following the homicidal act. In several the intellect was very slightly affected, and almost the only proof of mania was the *act* itself, which was involuntary, impulsive, irresistible, and scarcely preceded or followed by any disorder of the intellectual functions. In others, and the majority of cases, there was a general disorder of the intellect leading to the homicidal act; in some cases with, and in most with no obvious delusions: I therefore classify the cases under two heads:—

I. Homicidal Monomania; II. Homicidal Mania.

I. The term Homicidal Monomania indicates that the mania is of a purely homicidal character, and that there is only partial mental disease. The distinguishing characteristics are,—a sudden impulse to destroy life, without any obvious premonitory or subsequent symptoms of insanity. Of the existence of this class great doubts were held until of late years; and I know of an able medical man, in large lunacy practice, who declared that a homicidal maniac *who was charged with murder, could not be insane when he committed the act charged, because he saw him in a sane state a few hours afterwards.* This was a most erroneous judgment, as at least 8 of the cases I am to detail prove the contrary, and must satisfy the reader that the homicidal act may be committed under a transitory fit of monomania, the actor being apparently of sound mind before and soon after the act. Nowhere can a sadder commentary be found, than in these cases, on what the great English moralist has said,—“The most humiliating thought a man can have is the uncertainty of the possession of reason.” He might have added, “*and the possibility of the sudden momentary deprivation of it.*”

Homicidal Monomania with Relapse.

G. W., aged 44, a male, was tried on the 9th November 1831, for the murder of his own son, whom he stabbed with a table fork while the child was at play. I shall abridge the details which I have given *in extenso* elsewhere.¹ Suffice it to say that no premonitory symptoms were known, and he became at once intelligent after the act, and under bitter remorse exclaimed,—“I was impelled by the devil.” He had a *relapse of the homicidal impulse* in September 1848, and entreated to be secluded, because in passing the room-door of a fellow patient and prisoner, he said “he felt himself

¹ See page 529 of this volume of the Journal.

strongly tempted to rush in and murder him." On this, as on the first homicidal attack, the impulse passed away, and sanity seemed to supervene.

Homicidal Monomania—Matricide.

J. B., aged 50, a female, murdered her own mother. J. B. was tried by the Circuit Court of Justiciary, Perth, on the 29th April 1852, and found to be insane, and not an object of punishment, and adjudged to be detained in prison all her life, or at least until future orders of Court.

She was admitted to the General Prison for Scotland on the 14th May 1852. This prisoner had lived as a spinster, and been chiefly in domestic employment. She can read and write well. No general disorder of the intellect was known to precede the matricide; and little has been observed of mental disorder since her admission except weakness of mind and a bad vindictive temper. She is hysterical, peevish, and discontented.

Homicidal Monomania.

J. J. or S., aged 35, was tried on the 8th September 1852, at the Circuit Court of Justiciary, Jedburgh, charged with the crime of murder, and on trial found to be insane, and ordered to be detained in prison all her life, or until further orders of Court. She was admitted here on the 12th October 1852. This prisoner was noted for being of a violent temper, very disagreeable to every one about her, and apparently wicked. I cannot learn the particulars of her case, or that she exhibited any mental disorder before the committing of the act charged. But I find it noted in the Reports of the surgeon of the prison, that during all the time of her imprisonment he could not discover any mental disease.

She was liberated, as recovered, 18th December 1856. The act was said to have been caused by delirium tremens.

Homicidal Monomania.

A. M., aged 35, a female, was tried for murder at the Circuit Court of Inverness, 24th April 1851, and found to be insane at the time she committed the act charged, and adjudged to be confined in prison, subject to the future orders of the Court of Justiciary.

She was admitted here from the prison of Dingwall, 21st August 1855. The surgeon of Dingwall prison expresses great doubts of her insanity, and says, "She is weak-minded (demented) probably from diseased brain. She exhibited fits of frenzy when she entered the prison, and in one of such fits I suppose the murder was committed." This woman, during the years she was observed in the General Prison, was not strong-minded; but never showed incoherency in conversation, or any violent or extravagant conduct. She was rather delicate in health of body, and died of phthisis on the 20th November 1859, after being in this prison fifty months and thirty days. There was no brain disease.

The next case is so intensely interesting that I give it with all the particulars of the history I have been able to procure.

Homicidal Monomania, with Relapses, also accompanied by Delusions; a Triple Murder committed.

A. M'P., aged 26, was tried at Inverness by the Circuit Court of Justiciary, on the 30th September 1857, and found to be insane at the time he committed the act, and adjudged to be detained in prison subject to future orders of the High Court of Justiciary.

A. M'P. was an agricultural labourer, born in one of the islands of the Hebrides. The charge against him was the murder of three persons, his father, mother, and aunt in one night. He is a tall, powerful man, with dark, thick, bristly hair, large square head, thoughtful and taciturn, but of a peaceable disposition. He is a Roman-catholic by religion, devout in spirit, and much given to read his Bible.

The history of this man discloses no symptoms premonitory to his homicidal acts. He has stated that, having been absent from his father's house for some time in service, he came home, and became alarmed about his spiritual state. Having been often away from confessional, and from the ordinances of religion, the priest warned him of his danger. He then began to have delusions, especially that the priest and all his friends were against him. He believed himself to be the brother of Christ, that he had a commission from heaven to destroy all in the island, and that then he and his sweetheart were to possess it and live in the lighthouse.

The *first homicidal impulse* led him to lie in wait for the priest in chapel, but this design did not succeed.

Another impulse led him to seek the life of one of his brothers, and he states that he rose repeatedly by night with the intent, but failed to carry it out.

At length one night he rose, and with a razor cut the throats of his father, mother, and aunt. After these horrid acts, he felt pride and exultation; indeed, describes himself in an ecstasy; but in a few weeks he suddenly awakened to an awful sense of remorse for the atrocities he had committed.

The patient was admitted to the General Prison for Scotland, on the 21st December 1857, from which date he exhibited nothing more than depression of mind, with unhappy remorse. He was devotional in spirit and of a quiet temper; only at times his melancholy broke out in tears, sobs, and paroxysms of grief. With the above exceptions his general condition of mind was good; and up till April 1861 (three and a half years from his admission), all that could be said of him was, that he had some weak-mindedness. Indeed, the question was being considered, whether he was altogether sane or not, and ought to be reported so; when in April 1861 he one day said, "I am a strong man, and more warders will be required to keep me from hurting them." It was found necessary to restrain him in a padded room, as he became at once furiously homicidal, incoherent, and dangerous. Whenever opportunity offered, he made a rush at the officers, as if to destroy them. This continued for several months and went gradually off; and he was

reported well in the end of September. There has since been seen no incoherence and no violence; and he has returned to his old state of a devout, quiet, and tolerably sensible man.

Remarks.—1. This is a case bearing a great resemblance to that of G. W., in which there was *relapse of the homicidal impulse*. In A. M'P.'s case, the impulses were at least three in number, and the relapse was after three and a half years of tolerably good mental condition, indeed, when the patient was to all appearance of sound, although not of strong mind.

2. There was no known cause, and no premonitory symptoms to explain the *relapses*, either in the cases of G. W. or A. M'P.

3. The case of A. M'P. differs from that of G. W. in having delusions. However, the delusions of A. M'P. were revealed by himself; and although G. W. did not state any delusions, it is probable that in his and in all cases of homicidal mania, there generally are delusions or hallucinations.

4. In these cases, the mental condition was soon restored to the state of comparative soundness in which it was before the *homicidal monomania*. There were no permanent effects of mental disorder caused by the attacks, and there was no proof of brain disease to explain the violent paroxysms.

No doubt, such cases are sufficient ground for all patients who have had one attack of homicidal monomania being kept in proper custody.

Homicidal Monomania, attended by Suicidal Attempts.

A. M., aged 23, was tried for the murder of his grandmother, by the High Court of Justiciary at Edinburgh, on the 16th November 1859, and found to be insane at the time of committing the homicide charged, and not a proper object of punishment, and ordered to be kept in strict custody in prison.

A. M. was a sailor, and had returned from the sea to his native place, where he took up his abode in the house of his grandmother, whom he murdered. He came home on the 19th August 1859, after a fit of drinking hard for several days. He complained of being ill from indulgence in drink, became sleepless, terrified, heard *imaginary persons in the house hunting after him*; and on the 21st, suddenly with a breakfast knife stabbed his grandmother repeatedly in the throat. She soon after died from loss of blood, the knife having divided the jugular vein.

A. M. at once confessed to what he had done. He rushed out of the house, towards the bridge over the river Earn, hesitated and turned. He said "he was in the horrors, never had thought of taking his granny's life, but had often thought of taking his own life." His hands and clothes were bespattered with blood, his eye wild, his whole frame agitated, before he was taken to prison. But the same evening, when seen by the late Dr Malcolm of Perth, he is stated to have been calm, quiet, and rational; and the doctor thought and said, that the man must have been sane when he committed the murder, as he *did not believe insanity could pass off so quickly*.

At the trial, the Court allowed all the medical witnesses to be present, to hear the evidence of the antecedent history of the accused. It was then elicited that A. M. had been insane three times, and on all these occasions he betrayed a tendency to violence, both towards himself and others. He was in the Bicêtre of Paris under suicidal melancholia; afterwards in St Thomas's Hospital, and in Camberwell Asylum was under restrictions as a dangerous person. All these attacks, however, *followed after fits of drinking.*

The jury returned a verdict of "Not guilty," on the ground of insanity at the time of committing the act.

Remarks.—This case has several most interesting features.

1. All the insane paroxysms were consequent upon indulgence in alcoholic liquors; and there is abundant proof that alcoholic stimulants bring on attacks of insanity in certain constitutions predisposed to mental disorders.

2. The unhappy youth became perfectly sane almost immediately after the act; and after hearing the evidence, the medical witnesses, with one exception, agreed that the sudden *return to a sane state was no proof that the man was sane* at the time of committing the act.

3. Since his admission to the General Prison, 22d February 1859, A. M. has been under my charge. He has exhibited no insanity, and has enjoyed uninterrupted health of body and mind. Accordingly, in terms of the regulations for the duties of resident surgeon, I reported that A. M. was not an insane or lunatic person, and as far as I could discover of sane mind. At the same time I stated, "I deem it, however, necessary and proper to add, that I consider his state of mind to be due to the quiet and order of the hospital treatment; but, looking at his antecedents and his constitutional tendency, his malady might return if he were subjected to the excitement and irritation of common life, and therefore I cannot regard him as a fit subject to be at large."

On this report, and under the authority of the managers, this patient has been for some time removed from the lunatic department proper and placed in the main prison, in a room of his own, and is employed in the prison service.

Homicidal Monomania, with Delusions and a Suicidal Tendency.

E. P. or M., aged 38, was tried at the Circuit Court of Stirling, 21st September 1860, and found insane at the time of committing the murder charged, and not a proper object of punishment, and ordered to be kept in strict custody in the prison of Stirling until her Majesty's pleasure be known.

This prisoner was admitted here on the 26th October 1860, with no account of her history, but that under the delusion that she and her family were to be burned in the poorhouse, she threw two of her children and herself into the canal at Falkirk, to avert the dreaded calamity. One of the children was drowned.

Remarks.—This woman seems to have discovered no general disorder of the mental functions before or since the act of homicide.

She is a robust person, sullen and taciturn, and after the most strict observation, I have not been able to detect in her any delusion or mental aberration.

Homicidal Monomania, with Delusions and a Suicidal Tendency.

A. M'K. or M'G., a female, aged 28, was tried at the Circuit Court of Perth, 26th April 1861, under the charge of murder, and found to be insane at the time of committing the crime charged, and not a proper object of punishment, and ordered to be kept in strict custody until her Majesty's pleasure be known. She was admitted, on this judicial finding, to the lunatic department here on the 24th May 1861.

She was in good health of body and apparently of mind, only depressed and melancholy. On her neck and near the larynx there is a large cicatrix, where she had attempted suicide, by means of a razor, immediately after the murder of her child. She seems not a strong-minded person; she can read a little, but cannot write.

Her personal history previous to the act charged showed her to be rather weak-minded. She was at times dissipated, and had two illegitimate children. When the offence was committed, she was married to a man with whom she formerly lived, and the offence was the murder of one of her illegitimate children.

A. M'K. or M'G. had been attending revival meetings, got excited, and then alarmed lest she was not within the pale of salvation, began to sing hymns, quote scripture texts, became sleepless, violent, felt as if burning in the place of torment, got up from bed 30th January 1861, and, with one of her husband's razors, cut her child's throat, and then her own. When asked how she came to do this, she said, "The devil had been with her all night and made her do it, that she was now sorry for it, and knew that she would be hanged for it."

The prisoner thereafter *became quite collected*, although she did look wild. Dr R. depones, "*I could not say that she was then out of her mind.*" When she saw me she said, "What is this I have done, killing my own flesh and blood?" She appeared to be excited, but quite rational.

Remarks.—1. Although a weak-minded person, this patient has not exhibited, after the homicidal act, any general mental disturbance. Since her admission to the General Prison, I have seen no indications of insanity.

2. Until the excitement which led to the homicidal act, there were no premonitory symptoms of insanity. The act was sudden and the impulse transitory.

II. *Homicidal Mania.*—Under this head I give the remaining sixteen cases, which are characterized by general mania, in contradistinction to the former class, in which there was monomania of a homicidal character, and little or no other mental disorder. I offer this class of cases in a synoptical form, so that this paper may contain a full report of all my cases up to this date.

Synopsis of 16 Cases of Homicidal Mania.

NAME.	AGE.		DATE OF ADMISSION.	REMARKS.
	M.	F.		
A. S. or S.	35	...	Dec. 10, 1846.	A shoemaker; found insane at the time of committing the offence; became insane, and was about to be taken to an asylum, when he stabbed one of the persons about to arrest him. This man died, October 23, 1857, after he had been 11 years in confinement.
E. L. . .	...	35	Dec. 29, 1846.	Was insane, and considered harmless; living as a house-keeper; when, suddenly, in a paroxysm of insane rage, she murdered her mother; and next morning was found sitting on the body and singing, exulting in having murdered a witch. This was probably her delusion. This woman is still alive, and rather weak in mind and body.
P. C. . .	42	...	Feb. 5, 1847.	A schoolmaster by profession; given to drunkenness; murdered his aunt, and attempted at the same time to murder his mother. On trial, found insane. He was quiet, hypochondriacal, and suicidal. His mind did not improve. He died, 13th May 1857, after more than 10 years' confinement.
A. M'L. .	33	...	Feb. 6, 1847.	Charged with the crime of murder, and found insane on trial. He was a Glasgow weaver, unmarried, and belonged to the Church of Rome. He murdered a young man, who ordered him out of his house at Tarbert on Lochfine. A. M'L. used to boast of the act he committed. His mind never improved. He died, 16th June 1850, after a confinement of more than 10 years, having been tried 1st May 1840.
T. M'K. .	37	...	May 4, 1847.	Tried 6th May 1839 for the offence of murder, and found to be insane. He became insane in 1835, and lived with a deaf and dumb sister, whom he killed by inflicting no less than 13 stabs in her body. He had delusions that he and his sister were plotted against and persecuted by the world, and he destroyed her in order to relieve her distress. This man has now been in confinement for about 23 years, and enjoys tolerable health of body; but his mind is so utterly incoherent that I have never known him utter a sentence in which the ideas could be traced to have the slightest concatenation. He has fixed topics—the Pope, the bootmaker, the bishop, Duke Street, the Trongate in Europe, are all jumbled together in strange confusion. He is cheerful and contented.
J. M. . .	37	...	May 14, 1847.	Was tried, 9th November 1831, at Ayr, and found to be insane. He was a tailor, and had been 30 years insane, and considered harmless in the poorhouse of Ayr. After being there 6 years, he suddenly committed murder. On being charged with the act he, after a persistent silence of 17 years, spoke, and admitted the charge. He said he murdered H. W. to put him out of pain. A pistol fired at this man's ear is the alleged cause of insanity. This man had high ideas of himself,—that he was a judge, an emperor, had vast wealth, could bring down the stars, and often lighted his pipe at the sun, and visited the moon. Yet he talked intelligently on many subjects. He died, 5th February 1861, from the gradual decay of insanity.
J. D. . .	35	...	Sept. 20, 1847.	On the 22d December 1846, was tried and found insane, and unfit for trial. He kept an eating-house in Glasgow, and killed a man with whom he had been drinking. He used to have delusions here about imaginary beings tormenting him, breaking his bones and pushing red-hot pokers through him. He died suddenly, on 29th July 1860, from heart-disease.
J. A. or K.	...	39	April 5, 1849.	Tried for murder, and found to be insane. This woman was married, and harsh treatment from her husband drove her to dissipated habits. She was attacked soon after labour with puerperal mania, and strangled her infant. When she arrived here she was well, and was afterwards set at liberty.
P. P. or S.	50	...	March 29, 1850.	Charged with a double murder, was tried at the High Court of Justiciary, Edinburgh, 16th May 1850, and found insane. P. P. had been in an asylum about five years before, and was discharged cured. His status was that of a small farmer. He lived alone, because he and his relatives could not agree, his temper was so violent. He had an animus against the doctor who certified him insane. One night he secreted himself in the house of the doctor until the household were in bed; then murdered, by means of a poker, the doctor and his mother. He was found by the neighbours composedly lying in bed, and the two dead bodies on the floor near him. This man is generally intelligent, but has various insane opinions, amounting to delusions on politics and religion. A curious feature in this case was premeditation, malice, and design in the act. This man has plotted the murder of officers in this prison, and is a dangerous man.

NAME.	AGE.		DATE OF ADMISSION.	REMARKS.
W. J. . .	M. 50	F. ...	May 29, 1850.	Found insane on trial; was a farmer; had been in an asylum before, and on economical grounds taken home, where he was turbulent and tyrannical. In an inn he quarrelled with his brother, to whom he cherished a hatred, and stabbed him in the breast. The wounded man walked up stairs to a bedroom and fell down dead. It was found on dissection that the knife had entered the right ventricle of the heart. In this case there is something like premeditation and malice. This patient died of diarrhoea, 13th September 1854. The knife had been sharpened and concealed for the purpose.
W. K. . .	22	...	June 18, 1850.	Found insane at the bar of trial when charged with murder. He looks like a man congenitally of defective intellect. He had, like the preceding patient, been liberated injudiciously from an asylum (at two separate times), and was lodged with a private family, when he seized a child he was fond of as a companion, and dashed its brains out against the stump of a tree. He is still alive, and in good bodily health, but in a state of dementia. He is given to strike suddenly, kick and assault fellow-patients, and is looked upon as an incurable.
J. D. or D. S.	24	...	March 18, 1853.	This man was charged with murder before the Circuit Court of Justiciary at Glasgow, on 4th January 1853, and sentenced to death; but commuted to transportation for life on account of insanity. After sentence of death was pronounced, on return to prison, symptoms of insanity became so distinct, that sentence of transportation for life was the commutation. There is little doubt that this man was always of weak mind. In early life he could learn nothing, and lounged about as a vagrant errand boy. His mother, I am told, was a lunatic. When a boy he used to read eagerly about Burke and Hare, Rush and others. He was fond of horrible stories, and talked fiendishly about seeing two fellows hanged. It is probable that this was a homicide from a morbid, infectious desire to imitate the murders he read of. He talks yet gleefully of the way in which "he sneaked off the bairn's head in the cradle." The subject of the murder was an infant sister; with a razor while alone in the house nursing her. He is in a state of dementia, approaching almost to idiocy.
M. F. or M' L.	...	28	July 15, 1856.	This was a case of puerperal mania. Under a fit of jealousy, she cut the throat of her child. This is all the information I have of this case. The patient is sulky, at times violent, with great mental disorder, and not at all improving.
H. S. . .	27	...	Feb. 19, 1857.	This man looks congenitally imbecile. In the Greenock poor-house he suddenly murdered a pauper. He is still dangerous; given to strike without cause and without warning, and is a powerful man. His mind is quite gone, and he is an incurable.
D. C. . .	37	...	July 30, 1858.	Found insane in bar of trial, having been charged with the murder of his own son. He was at one time a keeper in Murray's Asylum. He is a man of a fine person; vain, proud; after a few weeks of unsettled state of mind, he seized his own child by the heels, and twice dashed his head to the ground with violence, so that death soon followed. He had delusions about good and evil spirits visiting him; he saw an evil spirit on the head of his son when the act was done; he supposes himself visited by the Holy Trinity, etc. This man is in fine health of body, but very insane. He is more calm, however, than when admitted.
T. A. S. .	39	...	August 4, 1858.	Found insane and not fit for trial. This man was born in Portsmouth; bred a ropemaker; but took to being a hawker. His wife had left him, and he was seeking after her, because she had used poisons to destroy his stomach and brain, which were all eaten away. These seemed his delusions; and remained for some time after his admission here. He had been drinking, and made a disturbance on the streets of Edinburgh, when a policeman seized him, and in the struggle this prisoner stabbed the policeman with a shoemaker's knife concealed on his person. With this knife he intended to kill his wife. This patient's mind is improved, and I have not been able to discover any delusions for some time.

ARTICLE IV.—*Case of Tracheotomy performed on a Child three months old.* By THOMAS ANNANDALE, M.R.C.S. (Eng.)

THE following case will, I hope, not be thought unworthy of a special report:—

About four o'clock on the afternoon of the 10th of December 1861, I was asked by Dr John Brown to visit a child with him. He requested me to bring instruments in case tracheotomy should be required. I found A. G., æt. three months, lying on his mother's knee and breathing with great difficulty, his face and lips were pallid, and occasional spasms of the glottis came on, which threatened instantly to suffocate the patient. It was evident that unless some relief was given, death must take place very shortly. On introducing the finger into the throat, the tonsils, back part of the pharynx, and root of the tongue, were found to be much swelled. The glands in the upper part of the neck were also much enlarged. It appeared that the child had been ill for some weeks, suffering from a cough, and that one week before, it became more restless and had difficulty in swallowing. Two days ago, after having been taken out for a short time, it turned very rapidly worse, its breathing became laboured, and spasms of the throat came on when it attempted to swallow anything.

Thinking that the child was suffering from some obstruction at the upper part of the throat, we proposed to the parents that tracheotomy should be performed, as it seemed to be the only chance of prolonging the infant's life. The parents consenting, I proceeded to perform the operation; and as it had to be done at once (Dr Brown only being present), I found it one of extreme difficulty. The trachea being laid bare, two or three of its upper rings were divided and a small tube introduced. This was followed by immediate relief to the little patient: his colour became more natural, and he took the bottle with eagerness.

On the 11th, the tube was changed. As a considerable quantity of thick mucus was constantly coming up, the tube required to be kept clean with a feather.

It is unnecessary to give all the details of the child's progress. For a week he went on favourably and took the breast well, being constantly watched, and the tube attended to by my friends Messrs Carson, Sewell, Conyers, Davidson, and M'Kenzie, to whose unwearied attention the little patient owed, in a great measure, its escape from a speedy death. At the end of this time, the parents attended to the child themselves, and certainly we could not have wished for more skilled or intelligent nurses.

On the 15th, the tube was taken out for a minute, but had to be replaced immediately, as no breathing took place by the mouth. Large quantities of mucus continued to be secreted; and fits of coughing occurred every now and then, causing great distress and exhaustion.

30th.—A tube was put in with a portion of its posterior wall taken out, in order to allow the air to pass beyond it.

January 4th.—The tube was taken out for a few minutes, when the child breathed a little the right way, but not without great distress.

20th.—Several attempts have been made since last date to take out the tube, but it is useless; spasms come on which would instantly suffocate the child if the tube were not reintroduced. The child is weaker, and gets no relief when the tube is changed. Dr Brown examined the lungs and found them quite healthy. It was thought that a change of air might have a beneficial effect on the irritation of the throat, so we advised that the patient should go to the country.

26th.—The little patient gradually got weaker, and died this morning about six o'clock.

At the post-mortem examination, the throat and lungs only were examined. All the glands of the neck were much swelled and congested. There was a wound in the upper third of the trachea, through which the tube had been inserted, and around its orifice was a mass of fibrous tissue, which formed a sort of funnel between the external wound and the windpipe. On laying open the larynx and trachea from behind, the rima glottidis was seen to be quite blocked up, the epiglottis was much swelled, and the mucous membrane of the larynx and trachea was also swollen and œdematous. There was no false membrane in the larynx or trachea. The fauces and tonsils were slightly enlarged. The lungs were quite healthy, with the exception of one small portion of the right lung which was congested.

Remarks.—This case is interesting, as being, so far as I am aware, the earliest age at which the operation of tracheotomy has ever been performed; and although the patient did not ultimately recover, I think that the length of time (seven weeks) which elapsed between the operation and the child's death, with the great and immediate relief which followed it, clearly demonstrate that the operation was justifiable, and successful so far as its performance was concerned.

The youngest case of tracheotomy previous to this with which I am acquainted, was that of a child seven months and a half old, on whom the operation was performed with perfect success by Dr Joseph Bell, in the Royal Infirmary here.¹ And in Mr Spence's valuable paper on tracheotomy in croup, the youngest child operated on was two and a half years old.²

The operation was performed in the usual way, no large blood-vessels were encountered, and having operated for croup on a fat little child a few months before, I was not altogether unprepared for the other difficulties which are met with in performing tracheotomy on such young subjects.

¹ See this Journal, vol. vi. p. 956.

² *Ib.*, vol. v. p. 694.

Part Second.

REVIEWS.

The Pathology and Treatment of Venereal Diseases. By FREEMAN J. BUMSTEAD, M.D., Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York; Surgeon to St Luke's Hospital; Assistant-surgeon, New York Eye Infirmary. Philadelphia: Blanchard and Lea: 1861.

THE object which influenced the author in the preparation of this work was to furnish the student with a full and comprehensive treatise upon venereal diseases, in which, however, theoretical discussions should be made so thoroughly subservient to practical details, as to render the volume a useful guide to the busy practitioner in the treatment of these most important ailments.

The additions which have been made to our acquaintance with the pathology of venereal diseases during the last ten years are both numerous and important, so that our present knowledge of the subject may be regarded as far more complete and satisfactory than at any former period. As yet, however, the knowledge of the facts upon which the modern pathology of venereal disease is founded has been necessarily confined to a few, whose interest in the elucidation of the subject has led them diligently to attend to the different facts and investigations, which hitherto have only existed in a scattered form throughout the periodical medical literature of our own and other countries.

Among the most important of these additions is the definite recognition of the distinct characters, progress, and results of the two species of chancre; the localized nature of the one, the constitutional infection which forms an essential part of the other; the constant existence of an indurated chancre as the necessary preliminary of acquired syphilis; the utter inefficiency of all attempts, by means of abortive cauterization, to check the development of the constitutional disease after the poison has once manifested its presence by the formation of a sore in the part; the immunity which the diathesis affords to the recurrence of the indurated chancre; the correct interpretation of the contagious nature of certain secondary lesions, and of the phenomena of so-called syphilization.

These subjects are all clearly elucidated in this volume; and not only so, but the subject of venereal diseases generally is treated in so orderly and masterly a manner, and with, what is so rare in works of a like kind at the present day, such perfect theoretical consistency in every part, that it seems to us the most satisfactory treatise upon venereal diseases at present extant.

Perhaps the most interesting portion of the work to our readers will be that which treats of syphilization; and to a short exposition of this therapeutic agency, as detailed by Dr Bumstead, we will devote our remaining space.

This measure, as they are probably aware, sprung from the experiments of M. Auzias-Turenne, as to the communicability of chancres to the lower animals. In conducting these experiments, he found that although a chancre could be inoculated upon the lower animals, the first sore was of larger size, secreted more matter, and was surrounded by more intense inflammatory manifestations than any further inoculations which were practised; and that a condition was at length attained when farther inoculations entirely failed. This condition of immunity was compared by M. Auzias to the condition of insusceptibility to the variola poison produced in the human subject by vaccination, and hence he called the process which produced this immunity *syphilization*.

In a communication to the French Academy of Sciences in 1850, M. Auzias drew certain practical deductions from his observations:

1. That syphilization may be employed in healthy persons as a preventive measure against the invasion of syphilis, in the same manner as vaccination is used to protect them against variola.

2. That syphilization is capable of curing persons suffering from constitutional syphilis.

The former of these propositions met with violent opposition and indignant rejection by the Academy, and with it the latter shared a like fate; but between the years 1850 and 1854, Sperino of Turin, Gamberini of Bologna, and Gulligo of Florence, published reports of cases of syphilis, in which the second of M. Auzias' propositions had been put to the test of practical experiment, with a completely satisfactory result. These successes were, however, received with but little attention in this country, until Dr William Boeck, Professor of Medicine in the University of Christiania, having repeated these experiments upon a large scale, came to the following conclusions:—

1. That constitutional syphilis is curable by syphilization.

2. That syphilization is infinitely more certain in its effects than any of the other so-called specific remedies.

3. That it is free from the dangers which attend on the use of mercury.

4. That relapses after this mode of treatment are more rare than after any other method.

Conceding as an undoubted fact, that such cures are effected after a period of inoculation which varies in average duration, according to Professor Boeck, from six to nine months, the question still remains, how are the facts of syphilization to be explained? Auzias-Turenne and Sperino both believed that they had so saturated the system with the syphilitic virus, that no single particle of the tissues was capable any longer of responding to the repetition of the specific

irritation. Boeck was unwilling to adopt this theory, as he saw that if saturation was what occurred, the manifestation of the disease should become worse instead of better; while Professor Faye most truly remarked, with reference to this doctrine, that it was quite a new fact in physiology or pathology, for a poison to act injuriously in a small quantity and beneficially in a large. But the true secret of the method of cure in those cases will at once become apparent, if we consider what was the nature of the virus employed for inoculation.

When Auzias-Turenne, Sperino, Gamberini, and Gulligo made their experiments, the distinction between the virus of the soft or non-infecting chancre and the indurated or alone-infecting chancre was unknown; but now-a-days, when we know that the soft chancre alone can be communicated to the lower animals, and that the indurated chancre can only, with the very greatest difficulty, be made to produce a sore by inoculation, in an individual who is the subject of constitutional syphilis, we can have no difficulty in at once recognising, that the virus which could be inoculated over and over again hundreds of times in the same individual, must of necessity have been derived from the soft non-infecting chancre,—the chancre without syphilis, a disease purely local in its character, and competent only to produce a local suppuration with destruction of texture. This view of the matter, as holding good in explanation of Professor Boeck's experiments, is elucidated by the fact which he mentions, that the best matter for the purpose of syphilization is that derived from a chancre attended by a suppurating bubo, or, in other words, a soft chancre; and that while all observers state that the pustule of syphilization is so far developed by the second or third day after inoculation, as to furnish matter for fresh inoculations, we know that it is characteristic of the indurated or infecting chancre, to have a long period of incubation, and to commence by a superficial ulceration or peeling of the cuticle without any pustular manifestation; and if further proof were wanting, it is supplied by the observations of Danielssen of Bergen, in cases of lepers who had never suffered from syphilis, but in whom he had practised inoculation with the virus commonly used in syphilization, and although the inoculation was not pushed to the point when immunity was attained, in only one example did syphilis make its appearance, and in that case, after 400 inoculations with the matter derived from soft chancres, by accident the pus derived from an indurated chancre was employed, and the result was, that "*a month afterwards an indurated sore appeared, followed by unmistakable signs of secondary syphilis,*" showing to a demonstration, how worthless the previous inoculations had been in affording any immunity against the effects of the truly syphilitic virus.

While further still, the experimental investigations of Ricord, Fournier, Rollet, and many others conclusively show, that in the circumstances in which inoculations are practised for the cure of

constitutional syphilis, the effects described could only be produced by the matter derived from the soft non-infecting chancre.

As the theory of syphilitic super-saturation is thus obviously untenable, we are thrown wide on speculation for an explanation of the curative effects of repeated re-inoculation with the virus of the soft chancre, and the tendency which the matter of the soft chancre apparently has after repeated inoculations to lose its effect; and the view propounded by Professor Faye and Dr Danielssen, certainly seems to have more reason on its side than any other which has been adduced.

They believe that repeated inoculation only produces a temporary and fictitious immunity of the part to the further action of the virus, and that if the chancreous virus is applied in larger quantities and introduced more deeply into the tissues, then the inoculations will almost invariably succeed; in proof of which, Professor Faye relates two instances in which he was thus able to produce chancres in persons who were supposed to be syphilized, and had been discharged as insusceptible to further inoculation. And, further, these gentlemen hold that the improvement in the constitutional symptoms of syphilis, occurring while the process of syphilization is being practised, is due to the depurative action of the suppurating surface formed by the successive crops of inoculation pustules.

In proof of this, Professor Faye has shown that like effects may be attained by repeated inoculations of the surface with tartarized antimony, and Cullerier has employed the repeated application of blisters to attain a similar result; while, more recently still, repeated inoculations have been practised by means of tincture of iodine, with an equally satisfactory success.

"Our present knowledge of the results and theory of syphilization may be summed up" (according to Bumstead) "in the following propositions:—

"1. The evidence appears to be indubitable that the treatment of syphilis by syphilization" (so called) "in efficiency and safety, is equal, and probably superior, to the treatment of the same disease by mercury." (We incline only to admit that it has been proved efficient and safe.)

"2. The susceptibility of the skin to the development of chancroids" (Clere's title for the soft chancre) "diminishes under repeated inoculations, until, finally, apparent immunity is attained.

"3. The secretion of simple chancres has alone been employed in the successful inoculations of syphilization upon persons tainted with syphilis.

"4. No absorption of the virus takes place, and the therapeutic effect is due probably to the depuratory action of prolonged suppuration.

"5. The immunity which is acquired is probably neither absolute nor permanent, and consists in a partial and temporary loss of reacting power of the skin consequent upon over-stimulation.

"6. The facts of syphilization do not conflict with, but, on the contrary, sustain the doctrine of the duality of the chancreous virus."

"While the study of science should never be pursued at the expense of morality or modesty, no false ideas of morality or modesty should deter scientific men from the investigation of truths which are likely to benefit mankind. The only immorality and immodesty in syphilization as originally proposed was the wild schemes of its founders to subject to this process those persons who were free from the syphilitic taint. Of how little value such a course would

be is evident from Danielssen's case referred to above. The idea itself was soon abandoned by the men who originated it, and has not at the present day a single advocate. Divested of this folly, and sustained as it now is by the testimony of high-minded and honourable men, syphilization is a subject of pure scientific interest, which no one need fear to discuss, nor carefully to experiment upon, with the laudable object of obtaining a more certain cure for syphilis, the treatment of which by mercury and iodine is confessedly imperfect. At the same time it must be conceded that the method by which syphilization is accomplished is repugnant to the feelings, and it is safe to predict that this mode of practice will not be generally adopted, at least in this country, until the already strong evidence in its favour shall be followed by proof that is perfectly irresistible."—Pp. 544, 545.

To us the success of the treatment of syphilis by this so-called process of syphilization, or chancerization as it had much better be called, merely proves how very great a necessity there is for all therapeutics being placed upon a sound basis, and of the propriety of making the acknowledgment that in our treatment of disease our object is, not to cure disease as such, but to aid nature in effecting a spontaneous cure by taking out of her way those obstacles which retard natural processes of elimination, or impede the powers of assimilation, and were we duly imbued with this idea, we should find ourselves in the treatment of syphilis neither mercurialists or non-mercurialists, iodists or syphilizers, but be ready to lend a helping hand in the process of elimination of the effete textures, which in their development have been blighted by the stamp of syphilis, and to recollect that in practice it is *patients* and not *diseases* we have to treat. If such results come of the process of syphilization, we shall think that those unfortunate creatures have not suffered in vain who have permitted innumerable inoculations to be practised upon their bodies till their trunk and limbs are scarred as though they had suffered from small-pox; but we imagine it is not impossible, if it be found the eruptions caused by tartar emetic and croton oil, the repeated application of blisters, or the inoculation with tincture of iodine are quite as effectual in producing a cure of syphilis as the process of syphilization, that some day it may occur to some therapeutic unbeliever, that quite as speedy a cure might have been brought about had nothing whatever been done but the patients left to themselves, or had administered to them any inert substance for an equal period of time. The great *experimentum crucis* of all treatment of syphilis, with which, however, none of the modern experimenters have compared their method, is the immunity it affords against the hereditary transmission of the disease. The good effects of mercurials are in no respect better shown than the power they possess of arresting this tendency, and we should regard it as a very desirable item of any new statement in favour of syphilization, or any other new method of cure, that its comparative effects upon the hereditary transmission of the disease should be distinctly indicated and contrasted with those of mercury.

P. H. W.

Health and Disease as influenced by the Daily, Seasonal, and other Cyclical Changes in the Human System. By EDWARD SMITH, M.D., LL.B., F.R.S., etc. London: Walton & Maberly: 1861.

THE varying positions of the earth in relation to the sun, and the changes produced by the revolutions of the globe around its axis, cannot but exercise an important influence on the condition of the human body, and must modify its capability for resisting the various causes of disease. Periodicity is one of the grand principles of nature; the ebb and flow of the tides, the alternations of day and night, the waxing and waning of the moon, and the succession of the seasons, are some of the most obvious illustrations of this great general law. Phenomena so striking were necessarily forced upon the attention of mankind from the earliest times, and it was not long before these changes in the external world became associated with the idea of mysterious influences exerted upon the body. Accordingly, among the early medical writers a high degree of importance was attached to the various periodic and cyclical changes. From various causes, however, the old doctrines fell gradually into disrepute. Many of the ancient physicians were gifted with the most powerful intellects, and possessed unrivalled faculties of observation, and not a few of the conclusions they arrived at remain even at the present day unassailable. But much chaff was mixed with the wheat; many of the principles supposed to be established were found not to be conformable with an experience enlightened by the progress of anatomy and physiology. Without denying, for instance, that there may be some truth in the doctrine of critical epochs and critical days, there is no doubt but that the ancients in framing their systems were largely influenced by what they knew of the properties of numbers, to which a mysterious importance was attached. Superstition in other forms was mingled with and vitiated the results of observation, and the discovery in after time that much was childish, led to the improper neglect of much that was true. But in a complete system of rational medicine it is necessary to take into account all the circumstances which can act upon the human constitution, affect the tendencies to disease, or modify the progress of maladies, and Dr Smith has deserved well of the profession in drawing attention to a much neglected subject.

Dr Smith's work is an admirable specimen of a mode of experimenting, for which we are chiefly indebted to the German physiologists; the observer selects himself as the subject of experiment, and for a longer or shorter period devotes himself exclusively to his observations. That Dr Smith did not spare himself will be evident from the fact, that on one occasion he fasted for thirty-nine hours, and that on another he remained without sleep for three days and nights. Both the character of the book, entering as it does very largely into details, and the space at our disposal, prevent us from

giving our readers more than the most general idea of its scope; but we regret this the less as the work itself should be in the hands of every one who takes an interest in the progress of his profession.

The first chapter constitutes the basis of the work, and embraces a series of experimental researches regarding the rate of pulsation and respiration, the amount of air inspired and of carbonic acid expired, and the quantity of urea and urinary water evolved during various physiological and pathological states. The subjoined passage contains Dr Smith's conclusions with regard to the daily cycle of pulsation and respiration, and it may be stated that the variations in the amount of carbonic acid expired and of air inspired, follow nearly the same law.

"In the evening, from 7 to 9 P.M., there is an evident tendency in the rate to decline, and with some slight variations this is continued progressively through the following hours until from 1 to 3 A.M., when the rate is at its minimum. During the next two hours there is a slight tendency to increase, but it is very gradual until the usual hour of rising, when it will have attained an increase of several pulsations per minute. Immediately after the breakfast has been taken there is a rapid and great increase, which attains its maximum in the second hour afterwards, after which it declines greatly in an hour, and loses from 10 to 15 pulsations immediately before the dinner. After the dinner has been taken there is another increase, but the rate is seldom raised so high as that which follows the breakfast, and the highest point is attained in the second or third hour. This again is followed by a decrease which precedes and a subsequent increase which follows the tea, when a point as high as that which follows the breakfast is usually found; and, lastly, there is the final decrease, which is usually progressive notwithstanding that supper may be taken at a later hour. When dinner had been taken at a later hour than that above indicated, the rate of the functions followed the same course as that now given, except that there was not any important increase after mid-day until the dinner hour. The rate remained low, but not uniform, from 12 to 1 P.M. until the dinner hour."—Pp. 11, 12.

The second chapter consists of the application to health and disease of the scientific results arrived at in the preceding part. A day is the period under consideration, and Dr Smith lays down and illustrates numerous propositions containing important conclusions regarding the mode in which it is to be spent, and regarding the diseases to which its various periods are most liable. The remainder of the work continues the subject under the headings of the weekly and seasonal cycles, cycles of the ages, and cycles of the generations of man.

The only point to which we can allude is, the much disputed question as to the change of type in disease, and as Dr Smith's remarks seem to us very sound, we make no apology for quoting them nearly entire:—

"In the discussions which have occurred on this subject it has been alleged, on the one side, that the character of disease has changed, and that the present mode of treating disease has simply followed the change of type; whilst, on the other side, this change of type is denied, and the altered treatment of this day is based upon improved views of pathology and improved means of diagnosis. In this fierce dispute, as in any other, there is doubtless truth on both

sides, and the partisans being assured of the truth on their side, illogically assume there is none on the other.

"It is impossible to deny that the increased knowledge of the present day has enabled us to separate conditions which before were believed to form part of one disease; and also that we can detect disease in an earlier stage than was formerly possible. It is in the highest degree probable that the so-called inflammatory fevers of the days of Armstrong and Clutterbuck, which were invariably treated by bleeding, were connected with inflammation of internal organs, as the lungs, or, in many cases, might indeed have been altogether such inflammations. It is also quite certain that the method of auscultation has given us new and highly valuable means of detecting the earliest departure from a healthy state; so that we can readily distinguish pleuritis from pneumonia, and both from pericarditis, and can determine the existence of pleuritis almost before any kind of effusion has taken place, and can point out the first or congestive stage of pneumonia. These are merely patent illustrations, but they suffice to prove that there is much truth on the side of those who affirm that our means of diagnosis have improved, and that we now discover the existence of disease before it has reached the stage in which it was first evident to the physician of former days, and in which, therefore, he would have commenced his system of depletion. It appears to us that it must be idle to deny this, or to attempt to explain it away, for although we, with the stethoscope in our hands and our improved system of diagnosis, may not give that close attention to the general symptoms of the disease which the acute men of former days gave, and may not therefore either appreciate or recognise them in the same high degree, it is impossible not to know that we have sure marks of disease before there are any external evidences cognizant to the senses. Hence we have increased light, and we use it as our guide.

"But all this may be true, and yet the truth contended for by the opposite side be admitted also. We think that we have given in the preceding pages abundant evidence to prove that the conditions under which men live, and under which they therefore acquire disease, have greatly changed, and hence to our mind it must follow, that the form and the type of disease must necessarily have changed also. This affords very strong presumptive evidence in favour of the view of the opponents, and to this we must add the talents and truthfulness of men who practised upon the old plan. In this argument we may admit that the nature of disease would vary somewhat in different localities and in different persons, and that it would be wrongly treated in many instances, just as we find those conditions to occur now; but we contend for a general character of disease which, in a very wide area, presents a common aspect to the medical practitioner. If the depleting treatment were thus generally as injurious as it would be in our day, is it possible to believe that this would not have attracted attention, or that the leading minds of the profession at the end of the last century were a whit less acute, observant, and conscientious than those of this or of any other age. At that period mental acuteness had reached its culminating point, and especially in the University of Edinburgh, and attention to the nature and value of general symptoms, and of remedies, was certainly not inferior to any in this day—indeed, taking into consideration the amount of light then and now afforded, we think mental acuteness to have been then far greater than now. The question is not whether they possessed as much knowledge as we do of the kind on which this day prides itself, but it is whether they followed a plan of treatment which was attended with the disastrous results which would attend it now."—P. 389-392.

In conclusion, we have only to repeat that Dr Smith's is a thoroughly genuine work, well worthy of the attention of every member of the profession.

The Climate of Algiers, in reference to the Chronic Affections of the Chest.
By PROSPER DE PIETRA SANTA, M.D. London: H. Bailliere.

THIS is a Report presented to His Excellency the Minister of Algeria and the Colonies, by Dr Pietra Santa, who was commissioned by that high functionary to investigate the peculiarities of the climate of Algiers. The report is divided into three sections:—I. *Climate.* II. *The Condition of Phthisis in Algiers.* III. *The Influence of the Climate of Algiers in Phthisis.*

The Report is ably prepared, and contains a great deal of valuable information, which in each section is briefly summarized. From the observations recorded in the first section, Dr Pietra Santa draws the following inferences:—"That the climate of Algiers is intermediate between a temperate and tropical climate," as proved by the purity of the atmosphere, a short twilight, seasonal and annual temperature, moderately moist atmosphere, limited variations of the barometer, and a definite periodicity in the winds and rains. From statistics quoted in the second section we learn that phthisis forms a considerable proportion among the causes of death, and there is no attempt to hoodwink the reader in this respect. In a mortality of 18,954 individuals, 1187 died of intermittent and malignant fevers, 936 of typhoid fever, 2058 of thoracic affections, and 1334 of phthisis purely. "Do not these results," says the author, "justify us in affirming that at the foot of the Atlas mountains, and in the Sahel mountains of Algeria, phthisis is unhappily found co-existing with intermittent and typhoid fever?" The summary of the third section we quote in full:—

"The various details into which we have entered enable us to sum up our report in the six following propositions:—

"1. The climatic conditions of the town of Algiers are very favourable to disorders of the chest in general, and to phthisis in particular.

"2. Phthisis exists in Algiers amongst the emigrants, as well as amongst the indigenous races, but the disease is much more rare than in France, or on the coasts of the Mediterranean.

"3. The increase of phthisis amongst the indigenous races (Arabs, Negroes, Mussulmen, Jews) depends upon exceptional circumstances, and upon causes which are independent of the climate.

"4. The favourable influence of the climate of Algiers is very apparent in cases where it operates either in averting the predisposition to phthisis, or in combating the symptoms which constitute the first stage of the disease.

"5. This influence is doubtful in the second stage of tuberculosis, and especially when the general symptoms predominate over the local affection.

"6. It is fatal in the third stage, when symptoms of softening and of disorganization have manifested themselves."

The observations from which these inferences were drawn are numerous, and in many respects not a little curious. Dr Pietra Santa's Report will amply repay a careful and diligent perusal.

ON LAW AND MEDICINE IN INSANITY.

AN INTRODUCTORY LECTURE.

By T. LAYCOCK, M.D., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology and Mental Diseases, in the University of Edinburgh.

PRACTICAL Courses of Lectures on Insanity have been given occasionally in London, and regularly in Edinburgh,¹ for several years past, but the course I deliver stands alone in the United Kingdom, as a systematic course on the theory and practice of mental diseases and defects, in being based on medical psychology. If any arguments were needed that such a course should form part of the medical curriculum, and be delivered in every medical school of the United Kingdom, recent proceedings in the English Courts of Law and in the House of Lords would amply supply them. From those proceedings, we learn how distinct and complete is the antagonism between law and medicine, as to the principles of mental science and its applications to mental diseases and defects. Medicine declares that insanity is a physical or corporeal disease; law declares that it is not. Medicine says that insanity and imbecility are different conditions; law that they are analogous. Medicine maintains that a theoretical and practical study of mental diseases and defects is necessary to the proper understanding and detection of mental disease or defect; law denies this, and says it is a fact to be determined by any dozen of ordinary men in consultation on the case. Medicine says a man may be insane and irresponsible, and yet know right and wrong; law says a knowledge of right and wrong is the test of both soundness of mind and responsibility to the law. Medicine says, restrain and cure the insane and imbecile offender against the law; law says, hang, imprison, whip, hunger him, and treats medical art with contempt. Thus law, as recently expounded in the English Courts and the English Legislature, is entirely antagonistic to medicine on all those questions of mental science which involve the freedom and well-being of the imbecile and insane, and which often determine whether they shall die an ignominious death or not. This antagonism is a very serious matter therefore to the insane, their friends, and families; more serious to the judges and legislators of our country; and not without deep interest to the medical profession. For with such direct antagonism to medical doctrines and practice on the side of law, the existing prejudices in the mind of the public, and which have been exhibited in very high quarters, will be more deeply rooted; so that we shall have greater difficulties to encounter in treating the insane, in bearing witness to their infirmities in courts of law, and in enlightening the public on a subject which most deeply concerns it. Let us examine, then, how this antagonism arises, and what are its results.

You are all, doubtless, aware of the recent legal proceedings in which the mental condition of a young English gentleman was a subject of inquiry. These proceedings were so scandalous, that Lord Westbury, the Lord Chancellor of England, introduced a "Lunacy Regulation Bill" into the House of Lords, with the object of preventing the recurrence of them; and it was during the discussion of that bill on the second reading, and when in committee, that that dignified and learned lord expressed his views as to the nature of insanity and imbecility, and the legal position of the insane. He remarked at the second reading that—

¹ Dr Conolly lectured at Hanwell in 1842; Dr Browne at the Crichton Institution in 1851. In Scotland the first lectures were given by Sir A. Morrison in 1827.

"The introduction of medical opinions and medical theories into this subject, has proceeded upon the vicious principle of considering insanity as a disease, whereas the law regards it as a fact which can be ascertained by the evidence, in like manner as any other fact. Therefore, we empanel a jury of ordinary men, and call upon them to try the question by proof of the habits, the demeanour, the conversation, and the acts of the alleged lunatic."¹ Now, in medicine, we not only adopt this principle denounced as vicious by the learned lord, but every moment that we shall meet together during the next three months will be occupied with practical illustrations of it. We cannot, in fact, study insanity or mental defects practically in any other way; while the proof of the value of the principle is exhibited in the vast ameliorations in the treatment of the insane, which have been secured of late years because the profession has persistently developed the truth that insanity is a disease. In the face of such facts it would be fair to infer that the opinions of the Lord Chancellor have been misreported; but this would be unwarranted, for, when the House of Lords went into committee on the bill, he reiterated the doctrine, and declared that it was an evil habit to consider insanity as a disease. "An evil habit," he observed, "had grown up into a precedent with judges and juries of assuming that insanity was a physical disease, and not a subject of moral inquiry," meaning probably by physical what we express by corporeal. And this "habit" or doctrine as to the nature of insanity is "evil" and "vicious" in the judgment of the Lord High Chancellor because of its results; for it has led judges and juries to assume farther, that they are "bound to accept medical testimony" in reference to insanity, and thus "were forced to adopt the speculative views of members of the medical profession instead of their own moral conclusions," as to whether a person whose civil rights and responsibilities were involved was insane or not, whereby the administration of justice between man and man and society and man was hindered. The learned lord was therefore strictly logical, when he affirmed that it was absurd to suppose medical science had any special business with the detection of insanity. "Was it indispensable," his lordship asks, "that persons should have studied in the schools of medicine, listened to lectures, and walked the hospitals, in order to form a conclusion whether a man was or was not a lunatic? Yet, by the existing law, that was the very absurdity committed."² The boldness of this opinion must have surprised those familiar with mental diseases, as much as its antagonism to all experience of the imbecile and insane. It is true enough that there is a stark, staring madness which hardly any man could mistake for sanity; but it is not such instances which give rise to doubts, legal or medical; these arise as to much more subtle and insidious forms of disease, and try the acuteness of the most experienced. I will not say, however, that this boldness of statement is, *prima facie*, a proof that the Lord High Chancellor has not had an extensive experience of the insane, or that his doctrines, so explicitly advanced as to the nature of insanity, are not the result of the most careful investigation. They were expressed by him as the highest legal functionary, and in the exercise of his duties as the official guardian of all lunatic and insane persons in England; and we must therefore assume that he has not formed or expressed them without the gravest deliberation, nor without a deep conviction as to the momentous results which his opinions would involve. Let us then examine on what grounds he deliberately and judicially sets aside the doctrines of medicine, when directing the legislation of the empire.

The fundamental doctrine now almost universally held by physicians and

¹ See *Times*, 12th March 1862.

² *Ibid.*, 25th March 1862.

physiologists, that insanity is a disease of the brain, is of high antiquity. It is contained in the oldest Greek classics on medicine and philosophy. It is true that in ancient Greece, and probably from time immemorial throughout the East, lunacy, epilepsy, and like diseases were popularly attributed to spiritual beings. Hence epilepsy and lunacy were termed the sacred disease, and hysterically delirious girls were believed to be inspired, and used as discoverers of the unknown, much in the fashion of *clairvoyantes* of the present day. The supposed character of these beings varied in different countries; in æsthetic Greece they were demons in a good sense—gods or heroes; in the more ascetic regions of Syria and Palestine they were demons in a bad sense—or devils. In either case, the cure of the lunatic and epileptic was undertaken by a class of professional exorcists, who promised for a consideration to dispossess the demons by sacred and mysterious processes. But this was not the medical view, for in the Hippocratic writings there is an essay “on the Sacred Disease,” in which these popular superstitions and delusions are controverted and ridiculed, and the strange, and, to the ignorant, awful doings of the sick shown to be due to disorder of the functions of the brain. That this was also the scientific doctrine as to mental disorders, is shown by the fact that it was taught by Plato—you will find it in the sixty-eighth chapter of the *Timæus*. Further, that it was also as current with intelligent laymen, as is now shown by the story of Hippocrates and the citizens of Abdera, who sent for him to cure Democritus of his supposed madness. Since this period the doctrine has never been lost; so that I may venture to affirm that insanity has been regarded by the profession and educated members of society in Europe as a corporeal or “physical” disease, for at least 2300 years.

The doctrines of modern writers vary much, without doubt, and in too many respects are contradictory. It is true, nevertheless, that all the best authorities in the United Kingdom accept what has been termed the somatic or corporeal doctrine in insanity, and hold that cerebral disorder or defect is associated with every form or manifestation of mental disorder or defect. And if this inseparable association of cerebral and mental activity be true as to all morbid mental states, it is equally true as to all healthy mental states. Hence the modern physiological principle as laid down in all our most recent works on physiology is, that no change in the consciousness whatever—whether it be sensation, perception, ideation, or volition—takes place without coincident, and necessarily coincident, vital changes. Nor is the assent of modern metaphysicians of high reputation withheld from these doctrines, although, perhaps, with varying degrees of fulness. It would have been gratifying to have discovered any traces in the Lord Chancellor’s speeches, of a dispassionate inquiry into the truth of this ancient and established doctrine, and into the number and validity of the facts upon which it is founded; but I deeply regret to say that no such traces can be found; so that we are inevitably driven to the conclusion that the noble lord has condemned it, and proceeded to legislate in antagonism to it, without such calmly judicial inquiry as is due alike to the nation and to the profession. And the regret is all the greater because nothing is so open to proof by any man of ordinary intelligence, who will discard all speculative and preconceived opinions, and examine it as purely a question of fact.

The question is, are all the mental faculties and capacities, without a solitary exception, inseparably associated with corresponding vital changes going on within the body, so that, without these occurring, those cannot be manifested? Experience, observation, and experiment must answer the question. Let the inquirer therefore ascertain for himself what changes occur in his modes of

mental activity under the influence of certain bodily conditions, or of agents modifying his bodily conditions. For example, when engaged in some mathematical calculation demanding the clearest exercise of his intellect, let him drink a glass or two of bitter beer or smoke a little tobacco and opium, and he will find that he has become incapacitated for completing his calculation. Or let him breathe a few whiffs of nitrous oxide gas or chloroform vapour, and, in a few seconds, he will find the drug has taken his reason prisoner, and he becomes instantly and absurdly insane. Or let him go farther in his doses of these things—drink his gallon of beer, take his grains of opium, breathe his chloroform more abundantly, and he will discover how entirely all consciousness has departed from him, if he will but accept the testimony of those around him. If he will not accept that, then let him watch the results of these drugs when used on other men, and he will have the testimony of his own senses to the facts; and beyond this no proof is needed or possible, except that which diseased states so abundantly afford.

But it may be objected that, although these facts be admitted, they only prove what few deny,—namely, the inseparable connexion of body and mind; that the morbid mental states depend upon morbid states of the brain is not proved at all. Now, to learn what part of his bodily frame is thus so influenced by drugs or disease, that feebleness, or disorder, or abolition of his mental powers results, the inquirer must examine into previous investigations on this point, and test their accuracy by investigations of his own. If the Lord Chancellor had done this, he would have found that the corporeal theories have become more definite as physiological knowledge has advanced. Thus, in the time of Plato, the heart was held to be the seat of one kind of mental activity, the liver of another, and the brain of a third.¹ But modern research has allotted to each organ and structure of the body its duty; and has determined that all those vital changes which are coincident with mental states go on in the encephalon, or that part of the body contained within the skull, and not in the heart, which distributes the blood,—nor in the lungs, which aerate it,—nor in the stomach, which supplies the digested material for its renovation,—nor in the liver, or kidneys, or skin, which purify it from hurtful things,—nor in the generative glands, which minister to the maintenance of the species. Then, if he examined the anatomy of those organs by which man attains a knowledge of the external world and acts upon it, he could trace the nerve-cords from the eyes, and ears, and nose, and mouth, and skin, by and through which he receives the impressions of sense, to the same encephalon; while from that same encephalon he can trace the cords running outwards to the mechanism by which he moves his body and limbs, and organs of sense. In this way the proof of the cerebral functions would be established. Then come the experiments of nature as to those functions, open to investigation chiefly to the physician, and manifested in the form of dreaming, delirium, coma, and the like, as well as in that of mental disease and defect. So that, whether we consider the mental states, in relation to the body in general, or the brain in particular, the doctrine of medicine has the most solid foundation in facts. And yet these facts only constitute a part of that foundation. Physiologists and physicians look upon man as what in truth he is,—an animal,—high above his fellow-creatures, but still an animal, and differing from those below him in mental faculties not so much in kind as in degree. Hence he can experiment and investigate as to his own nature in the animal world below him; nay, he can descend to the plant world, and there he

¹ Timæus, chap. 44–47.

finds that the same drugs which affect his powers benumb and paralyze the plants.

These, then, are the proofs of the medical doctrine as to mental diseases and defects: they are facts which challenge every possible investigation and inquiry, and must be shown to be fallacious by those who take upon themselves to deny the doctrine. Now, the accuracy of medical facts is, in truth, denied by the opposers of the doctrine. Thus the Lord Chancellor remarked, when his bill was in committee,—“But even medical men sometimes fell into egregious errors: they never made allowance for peculiar idiosyncrasies. A celebrated Scotch judge administered justice for many years with great skill and knowledge of the law, and, after his death, which took place suddenly, a post-mortem examination was held, when it was proved that he had been subject to extensive softening of the brain, and that it had been going on for several years. If he had not been misinformed, something similar, though not, perhaps, to so great an extent, happened recently in the case of one of our own judges. (Hear.)”¹ It would be idle to deny that all of us are very liable to err. Medicine is confessedly a conjectural art; yet I think we might fairly claim indulgence for errors in opinion from one whose chief duty is to decide upon differences of opinion on matters much more under direct cognizance than the phenomena of life. But in this particular instance the alleged fact is incredible, both as a whole, and as to details. None of us would or could pretend to deduce how many years a softening of the brain had been going on from a simple inspection after death of the brain affected, because such a conclusion cannot be so made. Nor, I am assured, is it true in fact that a Scotch judge had such softening for many years, while administering justice. The case quoted by the Lord Chancellor is, I suspect, very much like the famous case of the vomiting of three black crows. It is probably a version of that of a Scotch judge who administered justice for *three months*, died suddenly, and was found to have—not extensive softening of the brain in general—but circumscribed softening or softenings. These, it is well known, are compatible with a certain amount of mental capacity; the faculties are really somewhat impaired, but not very obviously or strikingly to a superficial observer, because the disease is local, or limited to one hemisphere. We have an analogous case when a man is blind of one eye from defect in the optic nerve, and neither he nor his friends know of the failing in vision until a medical practitioner is accidentally consulted and discovers it; and it would be just as reasonable to infer from such cases that the optic nerve is not necessary to perfect vision, as that the brain is not necessary to perfect thought and will, because a man with this kind of circumscribed softening could think and act rationally. Examples more strikingly exceptional than these occur in practice, without shaking in any degree our general conclusions as to the functions of the brain. A very dear and distinguished friend of mine suffered from palsy of the legs—the result, probably, of a kind of softening of the encephalon. After having been a helpless paralytic for several months, his brain underwent such a change that he had the hallucination that he was not in his own house; and while in this state he rose from his chair and walked.

The facts we have to deduce from are in truth so numerous, and the conclusions so certain, that there must be a special difficulty experienced by men constituted mentally like the Lord Chancellor in appreciating the evidence upon which the somatic doctrine of insanity rests. This is probably due partly to the prejudices of education, but mainly, I think, to the legal habits of thought as to the nature

¹ *Times* newspaper, 25th March 1862.

and force of evidence. Every man has, in truth, within his own consciousness the strongest proof of the doctrine; for, since every change in that consciousness corresponds to vital changes, without which it cannot occur, these conscious changes are to him, thus interpreted, the most conclusive proof of vital changes—nay, the only direct proof of existence. Hence the truth of the Cartesian proposition, “*Cogito, ergo sum.*” But as no man is ever conscious until he lives, and as life in the individual, so far as we know, precedes thought (for there is no proof whatever of intra-uterine consciousness), we can reverse the proposition with equal truth, and say, “*Sum, ergo cogito.*” Both conclusions rest alike on the testimony of that consciousness, which is nothing more than our experience of the vital changes appropriate to consciousness. When a man observes or listens to the experience of other men, the evidence of such vital changes is either hearsay or circumstantial, and therefore liable to all the fallacies to which these kinds of evidence give rise. Still, in the ordinary affairs of life, we infer that if a man is writhing, he suffers pain; or if he tells us he is perplexed and confused, we can entertain no reasonable doubt of the truth of his statement. In either case, we infer that those vital changes are occurring in his encephalon, which coincide with the feeling of pain or of perplexity and confusion of thought or speech. But the Lord Chancellor does not comprehend the value of such evidence in the detection of mental disorder; so that, when he desired to convince the House of Lords that the plan of receiving the evidence of physicians ought not to be adopted in cases of insanity generally, he said,—“If there were any process by which, in the case of a lunatic, a man’s skull could be cut into, and the different coats and linings of the brain exposed, so as to exhibit whether they were too much gorged or the circulation impeded, there might be something in the plan. But medical science had not yet attained that pitch of development, and medical men imagined external things to be the indices of things unseen. They therefore made issues, hardly less important than those of life and death, depend on mere uncertainty.”¹ Nothing could be more inconclusive than this argument, except the view which the Lord Chancellor entertains of the evidence by which the scientific and practical questions of medicine are solved. The fact is, that a dyspepsia is determined by the same kind of evidence as an insanity. All morbid changes in the body whatever, considered as ultimate phenomena, are unseen; so that, if we had ascertained the structure of the brain to the minutest fibril, and could lay it bare in the living man in all its details, we should still have to accept “external things as the indices of things unseen.” The subtle forces of life and mind operating in the brain are only to be determined ultimately as they influence consciousness in ourselves, or as they cause those changes in the body or its movements which are the indices of changes in the consciousness of others. We might as well look for the electric or magnetic fluid which carries the expression of our thoughts along the telegraphic wire. In every disease, whether it be a simple inflammation or the most insidious insanity, this is our position. Nor, indeed, is there any other kind of evidence possible, even in the most ordinary cases of this kind. If the police find a man uproarious, reeling about, and smelling of drink, they conclude he has been drinking, and, if they reason at all, will trace the drink from his mouth to his stomach, and from his stomach to his lungs and brains, where it is doing its poisonous work, and rendering him temporarily insane,—thus judging that external things are the indices of things unseen.

Let us now examine the results of legal pathology. When the Lord High

¹ *Times*, 25th March 1862.

Chancellor's bill was discussed in committee in the House of Lords, he said,—“The humble attempt which he was making had for its object to discover where the abuses and the causes of error lay which rendered such inquiries [as that of Mr Windham] generally odious, and the examination by mad-doctors little better than a farce. The effort was undoubtedly a novelty; but if it were sanctioned by their lordships, it would go far to take out the evil by the roots, and prevent the recurrence of scenes which were a reproach to the courts of this country.”¹ Zeal as a radical reformer (not a discoverer) of medical error must be conceded to the learned lord; but it is to be feared that his zeal is too unenlightened and too prejudiced to be effectual for the good ends he aims at. If medicine be right and law wrong, nothing but confusion worse confounded can result from the Lord Chancellor's efforts to apply legal principles, and regulate the doings of “mad-doctors” in the courts. In Mr Windham's case the facts are simple enough. Almost as soon as he came of age he entered upon a career of folly and extravagance. In particular, he contracted marriage with a woman of easy virtue, and lavished thousands upon her in gifts and settlements. An inquiry was instituted, and the question submitted to the jury by the presiding judge, a Master in Lunacy, was whether this young gentleman was of unsound mind or not; that is, whether his mind was morbid, so as to disqualify him for the management of his affairs. It was not whether he was imbecile in judgment or incapable, but whether he was unsound in mind. And that this was put with deliberate regard to the *dicta* of legal authorities is proved by the opinions which Lord Chelmsford expressed in his highly lucid speech on the motion for the second reading of the Lord Chancellor's bill,—“Under the existing law, no person,” he said, “however extravagant, foolish, or prodigal, could be made the subject of a commission of lunacy unless his acts were such as to lead a jury to the conclusion that he was of unsound mind; and a verdict founded on imbecility or weakness of mind only would be set aside as contrary to law.”² Further: in his bill the Lord Chancellor used the terms “unsoundness” and “imbecility” of mind as equivalent terms; and, in reply to Lord Chelmsford, remarked,—“It is through having regard to the nature of the alleged lunacy that the mischievous practice has been introduced of carrying back the inquiry in this manner [as in Mr Windham's case]. My noble and learned friend seemed to imagine that there was some peculiarity in the law respecting idiocy. But in their results idiocy and lunacy are precisely the same: originally there was a difference, but it has long since disappeared.” And, as an illustration of the farcical nature of medical evidence, he quoted that of a medical practitioner who said he knew “the alleged lunatic” when he was a child four years old, and that he was of opinion that he was then of infirm mental organization, and that the infirmity was congenital; that he had always shown evidence of congenital mischief such as he should have expected to ripen into idiocy in after age. This evidence of congenital defect, in the opinion of the Lord Chancellor, was a “farce,” because the proofs of “lunacy” at twenty-one were carried back seventeen years.

Such, then, being the legal dictum, how far does it coincide with medical science and common sense? The law of England considers a man incompetent to manage his property until he is twenty-one years old: till that age he is a sort of physiological imbecile as to property. There is nothing physiologically peculiar to the exact age of twenty-one in the attainment of wisdom; but it is a matter of common observation, that the mental faculties (which are hardly

¹ *Times* newspaper, 25th March 1862.

² *Ibid.*, 12th March 1862.

manifested at birth and during early infant life) are more and more developed as age advances and experience of the world is attained, so that the average individual is held to "arrive at years of discretion" when he completes his twenty-first year. This development of the faculties varies in degree, however, in different individuals; so that some, like Mr Peabody, the eminent American merchant, are equal to the affairs of life at so early an age as fifteen, some at a much later age than twenty-one; nevertheless these also attain to sound judgment, for the development is merely delayed. In others, however, there is not merely retardation, but arrest of development. This may occur in early infancy, and the man of twenty-one be an idiot—as devoid of mental power as an infant; or in boyhood, in which case he may be a childish imbecile as a man; or at puberty, when he will be a mischievous imbecile, strong as to his appetites and passions, weak as to his self-control; or he may be born idiotic or imbecile, the consequence of injuries acting upon him when in his mother's womb. If, then, the capacity of a man to manage his property be brought in question, in consequence of his prodigalities and follies, and the aid of medical science is sought, the scientific inquirer will determine, first, from his actions, what are the defects in his mental powers; and then seek, by an examination of his person, and an inquiry into his past life, whether corporeal causes have been at work so as to lead to defective organization and development of the brain; and whether such defective development was the cause of his indiscretions, and is likely to continue as such for the future. These conclusions can only be drawn from experience in similar cases of imbecility. Now, the causes are various. There may have been congenital defect, or a brain fever in childhood, or an injury to the head, or a drugging with opium or other narcotics in childhood, and the like,—all which causes would have to be inquired into, and carefully estimated by the physician in forming his opinions professionally. It therefore inevitably follows, that in cases of this kind, the inquiry, to be complete, must be extended throughout the whole period of the past life. And none could read the evidence, with a sufficient knowledge of the subject, without coming to the conclusion that Mr Windham, as compared with other young men of his age and station, is congenitally defective in mental organization and development. Now, it is most certain that medical art can only say in all these cases what is probable; it pretends to no more in lunacy and imbecility than in any other diseases and defects, and it is often confessedly in error. But then this is inherent in the very nature of the questions to be solved; so that, however speculative the opinions of the cautious experienced physician may be, most assuredly those of any dozen ordinary men will be more speculative, and that just in proportion to their incapacity to elicit and weigh evidence, and their ignorance and inexperience.

Let us now suppose that the inquiry had been as to Mr Windham's sanity, and ask what would have been the course of procedure. It is obvious that the first question would be, whether he had ever been of sound mind; and this being determined, then when he became unsound. This change would be indicated by the usual symptoms of insanity, as hallucinations, delusions, unfounded suspicions, and the like, with incoherence of language, and incongruity of conduct. Now, according to all experience, the inquiry necessary to this end need not have extended, in a man like Mr Windham, farther back than two or three years. In older persons, and especially in slowly advancing cases of general paralysis, a longer time might be needed. But there was no symptom whatever of insanity given in evidence—all tended to prove imbecility alone. But mark how the legal dictum which confounds the two is applied by the Lord Chancellor.

Because, as he justly argues, it is unnecessary to go back to childhood in insanity, he would prevent that which is necessary in imbecility.

But there is another defect in the legal dictum, of great importance. There are different degrees of capacity and incapacity in soundly constituted men; we are not all equally fitted to be Lord Chancellors, or even "mad-doctors:" *à fortiori*, there are different degrees in the congenitally imbecile. What, then, was the degree of incapacity as to which the jury had to decide in Mr Windham's case? Clearly whether he had the capacity to manage property worth several thousands per annum. Now, a youth of twenty-one may be competent to be an engine-driver, as Mr Windham appears to be, or a ploughman or day-labourer, although not competent to manage large estates or administer his income. I humbly submit, then, that the question which medical science and common sense would have put to a jury, untrammelled by legal *dicta*, would simply have been, whether Mr Windham's minority should be prolonged. But the law having had charge of him as a minor, and treated him as an imbecile by appointing tutors and governors to guide his imperfect boyish judgment, turns him loose on the world at the age of twenty-one exactly; and then, when the natural results follow, puts it to a jury, without choice of any alternative, not whether he is capable or not of managing the remains of his property, but whether he is *mad* or not. Now, I say that question was both false and foolish,—false as a question of medical science, and foolish as a matter of common sense. What, then, could be expected from such an inquiry, except that which did happen? The examination of the "mad-doctors" was by the very method of procedure constituted a farce; while the whole inquiry constituted unnecessarily a grievous wrong to an individual: and this because the law makes no difference between imbecility and insanity—between mental disease and mental defect.

To all this it may be answered, that modern systematic writers have classed mental defects, like idiocy and imbecility, with mental diseases, like mania and melancholia. This may be admitted as to some, but not as to all. The class of Vesanæ of Cullen included both defects and diseases, but insanity was carefully distinguished from amnesia and dementia. Be this as it may, the jurist had already in the Roman law the practical method of procedure. This distinguished between prodigals from defect and incapacity, to whom it appointed curatores, and the furiosi, or properly insane. ["Sed solent hodie Praetores vel Praesides, si talem hominem invenerint, qui neque tempus neque finem expensarum habet, sed bona sua dilacerando et dissipando profudit, curatorem ei dare exemplò furiosi; et tamdiu erunt ambo in curatione, quamdiu vel furiosus sanitatem, vel ille sanos mores receperit; quod si evenerit, ipso jure desinunt esse in potestate curatorum."—Ulpian. Corp. Jur. Civ. Digestor. Lib. xxvii. tit. x. § i.] In Scotland this part of the Roman law is in force at this moment; so that an imbecile or weak youth has curators appointed, without any inquiry into the metaphysical question whether he is of unsound mind or not.

The Lord Chancellor wisely proposes to legislate for another class of persons who are mentally defective from another class of causes. He would invest the Lord Chancellor with jurisdiction to provide for the care of aged persons who are in the state of second childhood, by surrounding them with the requisite protection, without the necessity of issuing a commission of lunacy. It is to be hoped, however, that in taking this necessary and too-long-delayed step, the learned lord will remember that, just as the age of discretion may be delayed from corporeal causes, so the period of senile dementia may be anticipated equally from corporeal causes. The natural decay of vital vigour in the brain, which is the cause of senile dementia, may occur prematurely, and be ushered

in by disorder of the faculties. There are also cases of dementia simply, in which insanity precedes the final change, and which should be specially provided for. To this end, however, medical skill is most undoubtedly necessary; for the question here arises, whether this premature dementia is final and complete, or not.

Having thus cleared away cases of mental defect, let us now examine the Lord Chancellor's proposed procedure as to mental diseases, or the various forms of insanity. He says, it is a vicious principle to consider insanity as a disease in law; it is a fact to be ascertained in a like manner as any other fact; and for this purpose a jury of ordinary men is sufficient, and no medical opinions are needed. Now, we have lately had a judicial procedure as scandalous in its way as the Windham case, but far more shameful, in which this method was fully carried out. A man named George Clark, a cabinetmaker, killed a tax-collector in Newcastle on October 1, 1861, by stabbing him with a sharp-pointed knife. In the month of May preceding the collector had distrained upon Clark's tools for the non-payment of his dog-tax; and this was the alleged motive, as it was clearly the exciting cause, of the murder. He was tried on 27th February last, and defended himself. The history of his conduct previously and subsequently to the murder, and his conduct during the trial, abundantly proved that he was an aggressive melancholiac, labouring under notional insanity both at the time he committed the act, and when tried for it. The judge laid down the law of the case to the twelve "ordinary men" who constituted the jury, and who, in accordance with his charge, brought in a verdict of guilty; and then the judge solemnly pronounced the sentence of death. He told the helpless lunatic at the bar he had no doubt, and the jury had no doubt, not only that when he committed the murder he was responsible for his actions, but also that he understood perfectly the whole of what he was doing in depriving himself of counsel and defending himself; otherwise he (the judge) would have postponed the trial or postponed the sentence. Then the judge solemnly exhorted the madman to repentance and prayer, and finally petitioned the Lord to have mercy on his soul.¹

Such was the deliberate, solemn procedure in an English court of justice in the year 1862, in the case of a maniac who, being left loose in society by the law, became in due course amenable to the law. I do not say that murderous maniacs should not be hung; much might be said as to the expediency of that; but certain inhabitants of Newcastle, in common with all who value justice rather than expediency, were shocked with that sad outrage on justice perpetrated in the name of the law, and at once took vigorous and happily successful steps to prevent the hanging,—the humane judge helping them. The judge was not to blame in this case, remember, but the law. This he laid down clearly and plainly, and I may say with admirable although inexorable justice, as between the maniac murderer and society. The legal dicta being what they are, no other course was judicially open to him. Clark knew what he was about, and therefore he was responsible for his actions; however mad he might be, if he knew this he must suffer the penalty; that is the law. "In a well-known case," he said, "the House of Lords put questions to the judges, and the judges answered them in this way." If a man had a delusion and killed another in consequence of it, if that delusion would not in law justify a sane man in seeking vengeance, neither in law would it justify an insane man. And the judge added the theory of the law. "In point of fact," he remarked, "the law does so because it acts upon people's fears, and it endeavours to protect persons from the murderous

¹ The evidence bearing on the mental state of Clark, and the charge of the judge, are given at length and ably commented on in the *Medical Critic and Psychological Journal* for April last.

attacks of others by acting upon the terrors of those who may feel disposed to do such attacks; and if a person has a particular delusion, but still has the power of knowing what he is doing, and that what he is doing is wrong, the law will make such a person responsible." And so Clark was condemned to be hung.

Now, there is perhaps no more instructive example on record of the mischievous influence of an ill-considered speculation than the opinion of the Law Lords, to which the judge in this case referred the jury, and which guided his own course in the solemn administration of justice. It has more than the force of an Act of Parliament, but yet is a mere dictum of a number of gentlemen learned in the law; most learned in that—nevertheless, with no professional knowledge of that which they had to decide upon—namely, the nature of imbecility and mental incapacity, and the bearing of mental disease upon even their own theory of legal punishments. This dictum was duly explained by a learned judge to twelve ordinary men, all equally ignorant of the subject as the twelve judges. A maniac pled before them for his life, and yet he was held to be both morally responsible and capable of conducting his defence: the plainest facts of the case failed to bring out the common sense of the judge or the jury, weighed down by the legal *dictum*; and a maniac was not only found guilty, but solemnly sentenced to death. The judge wisely said "it would be folly—almost blasphemy—to punish a man for an offence to which he has been instigated not by his own guilty will, but by an infliction sent upon him by Providence itself," and solemnly sentenced the man to be killed. But be it noted, on the next morning he wrote to Sir George Grey to express his doubts as to the man's sanity.¹ A certificate of insanity was then duly signed by two competent physicians, and the catastrophe of a judicial—almost blasphemous—murder was obviated. But the Nemesis of legal error still pursued the Government, for the magistrates of Newcastle, already enlightened by the Lord Chancellor's expositions, refused to concur with the physicians, and declared that the grounds for the medical opinion were insufficient to constitute mental unsoundness. The man had been fairly tried, and duly and solemnly condemned, and they concurred with the "ordinary men" of the jury; so that it only remained for Sir George Grey to get the wretched man out of their custody by commuting his sentence to PENAL SERVITUDE FOR LIFE.²

It may be fully acknowledged that all this is law, but it most certainly is not justice. It is to be hoped, however, that so solemn a warning will not be lost upon those whose duty it is to lay down the law as to insanity. I need hardly say that the legal doctrine of the twelve judges, according to which Clark was condemned, is as contrary to common sense and truth as the proposition that any dozen of ordinary men are as able to detect insanity in general as the experienced practitioner. Daily experience rightly read, as well as medical science and experience, abundantly shows that a man or woman may be imbecile morally from cerebral disorder and disease, and yet have good intellectual, nay, high logical powers. There are many who, being thus diseased mentally, drink to drunkenness, fornicate, lie, steal; are obscene, homicidal, cruel, malicious—in spite of a knowledge of right and wrong, and with the reasoning powers little, if at all, affected; and whatever the law may decide to the contrary, the inexorable logic of facts will hold its own. It is in vain, alarmists and opponents of these facts tell you, that there are more drunkards

¹ The surgeon of the prison who had watched Clark for five months said he was insane and the Medical Inspector of Prisons, sent by Sir George Grey, concurred.

² The prosecution, suspecting that Clark was feigning madness, sent Dr Macintosh to examine him, who reported that he was insane.

than would fill existing asylums thrice over; in vain, they say, if you treat every imbecile knave as irresponsible, you must convert all jails and prisons into asylums; in vain they express their alarm that if these doctrines be admitted as true the foundations of the social fabric will be shaken; the truth is not less the truth, and I take leave to say, that until it is carefully inquired into by our legislators and made available to the reformation or proper restraint, rather than the punishment of imbecile criminals, the same scandalous routine will be followed with the criminal population which has hitherto been contrary to even the simple principles of Christian morals. The question is one in which medical science, ethics, and common sense are in perfect accord. It may be laid down as a first principle that the capacity of an individual to be influenced by the motives which influence the average of mankind in health and soundness, is the measure of his moral responsibility to society and of society to him. He may be a mere child in moral development as well as in judgment, and when this is proved in the case of an idiot or congenital imbecile, the plea of irresponsibility to society is admitted, and society becomes responsible for him and to him, and keeps him out of harm's way. In like manner, the cases of notional, impulsive, and vicious imbeciles might be treated; the capability of self-control being the practical question to be decided by a jury, and not the amount of knowledge. Thus, for example, in the case of an alleged vicious lunatic, the question to be raised is not whether he is insane or not, but whether he is capable of controlling his impulses to vice or not. Like the question of imbecility of judgment, it is to be solved jointly by common sense and medical experience; if found incapable he should have his appointed guardians or curators until restored *ad sanos mores*.¹

The same principle applies equally to those criminal imbeciles which constitute the chief part of the incorrigibles in the criminal population. They are all held in law to be entitled to uncontrolled freedom; and thus the criminal imbeciles, as well as the vicious, become more certainly mischievous to society. Practically, under the influence of this principle, detention and restraint would still be the fate of the criminal population, but mercy and not vengeance would be the aim and the result of its operation.

There is yet another question I must touch upon. You will have observed that the Lord Chancellor spoke of "mad doctors" when he wished to designate those members of the medical profession who, like the philanthropic Dr Conolly and others, are specially occupied with the treatment of mental diseases and defects. It is undoubtedly a contemptuous term of vulgar origin, and one cannot understand why it should be so readily and so freely used in such high quarters. Even another noble lord occupying the high official position of Chairman of the Commissioners in Lunacy for England not only used the term, but expressed himself in a manner which must be held to be unfavourable and disparaging to the whole medical profession. The Earl of Shaftesbury is reported to have said, that "from his own experience of many years on the Commission of Lunacy, he could affirm that medical men who had not made the subject a special study, were as ignorant of mental disease as any one who observed it for the first time." And then the noble commissioner, forgetting the exception he had made in his sweeping denunciation of the profession at large, in favour of the specialists, proceeded to detail the particulars of a case in which he differed in opinion with a specialist as to whether a certain lady was insane, and remarked, "a person

¹ I read in the police reports of a large city in England the following:—"John Smith was charged with being drunk and disorderly, and was committed to the house of correction for seven days, making 36 committals."

calling himself a mad doctor, said the lady must be insane, because she wore a dagger." The noble commissioner is undoubtedly misreported here. It is inconceivable that any physician specially engaged in the management and treatment of the insane would designate himself by so vulgar and contemptuous a title as "a mad doctor." Nay, it is almost inconceivable that the noble lord would use such a term himself in speaking of a physician of this class. For any language which tends to bring the status of such physicians into contempt, tends necessarily to limit their usefulness, while, at the same time, it deters the best minds from entering upon that department of practice. The phrase "mad doctor" has also its effect upon those whose misfortune it is to be deprived of their reason; because calculated to obstruct that flow of sympathy and kindness which they especially need more than any other of the sick and infirm. Any one acquainted with the insane knows what tact, what skill, what moral courage and fortitude, and what thorough conscientiousness are needed in their attendants and guardians, and how difficult it is to meet with persons who have these necessary qualifications. But if madmen, madhouses, and mad doctors be brought into contempt by the language used in high quarters, how greatly are the difficulties increased in this respect! Of this the noble commissioner must be fully aware, simply as a person of common sense conversant with the world, and having a practical knowledge of mankind, if not of asylums, for I presume the visitation of these is not included amongst his Lordship's duties.

But a more terrible evil is inflicted upon the insane even before they reach an asylum. It is the peculiarity of insanity as a disease, that it cannot be treated effectually at home, or with the concurrence of the patient; he must be withdrawn, usually against his will, from all those stimuli to excessive mental and cerebral activity, which, probably, have mainly caused his malady, and which he too vigorously seeks. Hence the need that he be removed to a suitable place where his over-excited brain may have rest. Now, what is the effect on treatment and cure of this contemptuous discredit of lunatics, their asylums, and their physicians? The patient and his friends look upon the adoption of the best and only means of cure as a frightful calamity; they dread the stigma that will thereby attach to him and his children, if the head of a family, and too often the removal from home takes place at last when all hopes of cure are gone. How often do we see a sound understanding wrecked, estate wasted, a family impoverished, and the stigma finally incurred in its most aggravated form, when a few weeks early and suitable treatment would have saved all! The Lord High Chancellor was justly eloquent as to the expenses alleged lunatics were made to incur by judicial inquiries; the whole system is in truth a disgrace; but what is the loss of a few thousands of pounds when compared with the mental agony and slow torture, ending finally in mental death—worse than death itself—which the educated lunatic is too often thus most unnecessarily compelled to endure? It is not possible to estimate the benefits which would accrue to thousands of individuals, and to the public at large, if all these prejudices were removed, so that the sufferer from impending mental disease could at once avail himself of the best means of cure as readily as if he had a pleurisy. It is a horrible thing to witness, as I have witnessed, the gradual clouding over of a fine intellect, and to hear the poor patient exclaim, with the late George the Third, who drew his son, the Duke of York, aside, and bursting into tears, said—"I wish to God I might die, for I am going mad!"¹

¹ It is much to be feared that the opinions expressed in the House of Lords will seriously increase the litigation to which the profession is exposed when signing certificates of lunacy, and which has entailed grievous loss upon Scottish physicians, although successful in the law

But setting aside the argument of kindness and sympathy for these sad sufferers, it is of importance that early treatment should be facilitated in every possible way, from pecuniary considerations. The numbers of the insane living are constantly increasing—partly from increase of population, partly from the longer duration of life of the insane—so that asylums cannot be built fast enough or large enough for the incurables who are destined to linger on for many years in seclusion, and often despair. The remedy for this increase is twofold—namely, a more general knowledge of the nature of insanity, and of what induces it, and prompt treatment in the early stages by the ordinary practitioner. Whatever obstructs these essentials adds, in truth, to the national burden; whatever facilitates them tends to diminish it. Now, if the public has done little in this direction, I think the heads of the medical profession might have done more than they have. Unquestionably, it is an exaggeration to say, with Lord Shaftesbury, that those medical practitioners who are not specially engaged in the management of the insane, are as ignorant of mental disease as any lay person who has seen an insane person for the first time; for even the delirium of fever, or of wounds, or of the drunkard, is but a kind of mental disorder, and is too often witnessed in ordinary practice, not to teach the medical practitioner something of the nature of mental derangement. Nevertheless, the profession at large, it must be admitted, has not a sufficient theoretical and practical knowledge of the subject. But with whom rests this defect? The medical student is not required to make mental science in relation to pathology and therapeutics a special study either theoretically or practically; nor is he specially examined in it by the examining boards; and, when called to a case in private practice, he rarely sees its whole course and termination, as the patient is necessarily removed to a suitable house. There is thus no stimulus to the study of mental diseases, or to the scientific development of mental science in its practical applications; and in this way it happens that there are such diverse opinions and imperfect theories, and such speculative doctrines advanced by the profession. And I cannot but think that it would have been more satisfactory to the nation if these two noble lords, who, in their official capacity, have thus denounced the medical profession for its deficiencies, had taken the one simple and effectual means to remedy those deficiencies—namely, had expressed an opinion to the Medical Council and medical examining boards of the United Kingdom, as to the propriety of steps being taken to develop courses of instruction in mental science in relation to mental diseases and defects in every medical school of the United Kingdom. If to these be added suitable facilities for private treatment in houses managed by competent physicians; and if esteem rather than contempt be shown towards those who have duties to perform demanding the highest professional attainments and the noblest moral qualities, a check would soon be given to the ever-increasing number of the imbecile and insane.

From whatever point of view we look at the present position of mental science and of its practical applications to mental diseases, and to the administration of justice, it must be confessed that it is intolerable, and a disgrace to us as a nation. It is no longer to be endured that the courts of law and schools of medicine should be at issue as to the fundamental question, whether insanity be

plea. An Edinburgh physician, one only of several defendants in a late cause in which he was successful, has suffered a large pecuniary loss, besides much anxiety and waste of time, and has now to follow his antagonist to the House of Lords, and incur fresh trouble and expense in meeting the appeal of the pursuer. It is quite certain that this persecution of the practitioner, in the exercise of a painful and thankless duty, is already operating most injuriously on the welfare of families, by interfering with the early removal and treatment of the insane.

a disease or not, and as to all its important practical applications. It is quite certain that there can be no withdrawal therefrom on the side of the profession, for to that principle and its applications must be attributed the rescue of the insane from the state of degradation and the cruel usage of which they were the victims at the close of the last century: on the contrary, it will be more and more developed, for to recede would be to reverse medical progress, and stop all the large advance in mental science made of late years.

P.S.—In a criticism of this lecture it has been stated that I had no right to condemn the present state of legal pathology and of procedure in cases of insanity until I was prepared to state what other recourse is open. The Lord High Chancellor has laid down the only principle in a quotation from the work (to use his own words) “of a very admirable commentator, Mr Smith, who had died much too early.” “The opinion of witnesses possessing peculiar skill,” Mr Smith says, “is admissible whenever the subject-matter of inquiry is such that inexperienced persons are unlikely to prove capable of forming a correct judgment on it without assistance—in other words, where the matter so far partakes of the nature of a science as to require a course of previous habit and study in order to the attainment of knowledge with regard to it.”¹ A course of previous habit and study is unquestionably necessary for the attainment of knowledge in regard to mental diseases and defects, and, I would venture to add, not only for the purpose of giving evidence thereon, but for sifting and valuing that evidence judicially. Seeing this truth, “*The Times*” has suggested that physician-experts should sit with the judge and aid the Court in trials of this kind.²

Part Third.

PERISCOPE.

PRACTICE OF PHYSIC.

ON DIPHTHERIAL PARALYSIS. BY DR HENRI ROGER.

In an important discussion which took place some time ago in the Medical Society of the Hospitals of Paris, on the subject of *Diphtherial Paralysis*, I said, that admitting the propriety of the designation, the frequency with which cases occur is a most essential element in establishing a new nosological species. Take for example the case of paralysis; suppose we observe it only two or three times to follow some acute disease, as has been noticed in the case of measles, pneumonia, diarrhoea, etc., it is wise, instead of instantly establishing a new form of peripheral or reflex paralysis, to inquire if it was not possible that there was a simple coincidence; if the cases of *secondary paralysis*, though occurring seldom in proportion to the frequency of the primitive disorder, are somewhat more numerous, as in the case of typhoid fever, we ought to inquire, as before, whether there may not be a simple coincidence, or whether this paralysis is not dependent upon the diphtheria, principally that ataxic form of the disease in which the nervous system is profoundly affected, and there is manifestly a septic condition of the blood; finally, if the consecutive paralysis manifests itself very frequently, as for instance in a tenth, a fifth, or a fourth of the cases, as we see in diphtheria, we are compelled to look upon it as one of the ordinary sequels of the primary disease. Hence, on the one hand, the necessity

¹ *Times*, 25th March 1862.

² Leader of, *Ibid*.

of recognising a new form of paralysis, and, on the other, a completion of the history of diphtheria; so that, while, in the first place, the etiology of paralysis is extended, in the second we are provided with data useful in the prognosis and treatment of diphtheria. Let us then inquire what is the *frequency* of diphtherial paralysis, whether general or local.

1. *Degree of Frequency of Diphtherial Paralysis.*

Without going beyond the facts already recorded, it might be said in a general way, that of all the paralyzes secondary to acute affections, none is nearly so common as that which we see developed during the course of, or during the convalescence from, croup, and especially from pharyngeal diphtheria. M. Maingault, in a work on diphtherial paralysis, published in Paris in 1859, records ninety cases of the kind, which, indeed, are spread over several years, were partly collected by himself, but chiefly borrowed from various authors, and are, besides, selected cases. Since attention has been directed to this complication of diphtheria, the examples have become infinitely more numerous; but there is in this greatly increased proportion at once an appearance and a reality: the paralysis, no longer passing unperceived as formerly, appears to be more common, and no doubt really is so; for epidemics of diphtheria are certainly more frequent, more general, and perhaps more severe now than they were thirty years ago. This is the opinion of Professor Trousseau, who attributes the large number of cases of consecutive paralysis to this, "that for some years back, diphtheria has assumed that peculiar physiognomy which it did not formerly possess, and which characterizes the toxic form." (*Clinique Médicale*, tom. i., p. 380.)

During the last few years the medical journals have published more than one hundred and fifty cases of diphtherial paralysis, and, as Dr See remarks, "in certain epidemics the third or the half of the patients have been the subjects of an affection of sensibility or motility." M. Lemarie, of Pont-Audemer, treated in the course of a few months eighteen cases of pharyngeal diphtheria, of which six terminated fatally, and every one of the twelve patients who recovered suffered from a consecutive paralysis.

On comparing the preceding statements of different observers, we only arrive, however, at a somewhat vague approximation to the real proportion of cases of paralysis consecutive to pseudo-membranous affections, and if we have a certain idea of the *absolute* frequency of this complication, we have no data for deciding as to its *relative* frequency: this proportion has not been numerically determined, and I propose to endeavour to establish it, and to bring more precision into this question of etiology by means of clinical and statistical researches.

In the first place, I shall quote from two documents having reference to hospitals with which I was not personally connected.

During the first half of 1859, four cases of general diphtherial paralysis presented themselves at the Hôtel Dieu in the wards of Professor Trousseau; in two of these cases the diphtheria had been treated outside, and the patients had been brought to the hospital on account of the paralysis; in the other two the paralysis occurred in the hospital consecutive to a diphtheria of which all the phases had been observed. During the same period the number of diphtherial affections treated in the wards of M. Trousseau amounted to twenty-two, distributed as follows: croup, 12; pharyngeal diphtheria, 6; cutaneous diphtheria, 4. Here, then, comparing the two cases of paralysis which occurred in the hospital, with the twenty-two cases of diphtheria treated, the consecutive paralysis would be in the proportion of 2 to 22, or one-eleventh; but if it be borne in mind that in this series of observations the paralysis only occurred after pharyngeal diphtheria, which was only met with six times, the frequency of paralysis after pharyngeal diphtheria becomes greatly augmented, amounting, in fact, to one-third.

In the course of the same year, 1859, M. Garnier collected at the Hôpital St Eugénie, in the wards of Dr Barthez, fifteen cases of diphtherial paralysis;

of these fifteen cases, six were admitted into the hospital on account of paralysis consecutive to diphtheria, for which they had been treated at their own homes; in the other nine cases the whole course of the affection was observed, but M. Garnier does not specify (except in two cases of cutaneous diphtheria) to what form of pseudo-membranous affections the paralysis had succeeded. As M. Barthez received into his wards a hundred and forty-one children suffering from diphtherial affections, this gives a proportion of one case of paralysis to about fifteen of diphtheria in general.

It occurred to me that, in order to be able to form an accurate idea of the relative frequency of the affection, it was necessary to observe what happened in cases of croup, or pharyngeal diphtheria, under circumstances which permitted the observation of the disease during all its periods, and where there was an opportunity for witnessing the development of the paralysis. Accordingly, I have collected all the cases of diphtheria, more or less generalized (whether in the form of pharyngeal diphtheria, or of laryngeal, tracheal, or bronchial), which occurred in the wards of the Sick Children's Hospital during the year 1860. The number of these cases is 210.

The cases of diphtherial paralysis observed during the same year were 36 in number; but as 5 of these cases only entered the hospital after the cure of the primary affection, and solely on account of the paralysis, I exclude them from my calculation as to the frequency of the affection, although they will be taken into account when I come to consider the clinical history of the affection. There remain, then, 31 cases of paralysis (either general, or, as most frequently happened, limited to the pharynx), out of a total of 210 cases of diphtheria, which gives us a proportion of about one-sixth, or nearly 15 per cent. But this proportion, already considerable, must be materially augmented; because, on the one hand, some of the children who quitted the hospital as soon as convalescence was fairly established may have been lost sight of; and, on the other, in a very large number who died during the early stages of the disease there was no time for the establishment of consecutive paralysis; thus, out of 104 children in whom tracheotomy was performed on account of croup, 13 died on the day of the operation, 31 on the second, 22 on the third, consequently more than the half before the fourth day; that is to say, among the children so rapidly carried off, there was no time for the development of a secondary affection, such as a diphtherial paralysis; and it was only in a small number of the cases, where death occurred from the primary disease, that life was sufficiently prolonged to give the local phenomena of paralysis an opportunity for manifesting themselves. Although the object of my researches is to found upon statistics as the surest basis of my opinion as to the frequency of paralysis secondary to diphtheria, I conceive that, for the reasons I have given, I am entitled to assume a higher proportion than the mere numbers would convey, and that, from a calculation of probabilities, I am justified in raising it to a fourth or even a third, instead of a sixth.

I have proved in a direct manner, by facts carefully observed, that paralysis is a very frequent sequela of diphtheria; it is not sufficient to allow this to remain as a barren fact, but it must henceforth be looked upon as an important characteristic of pseudo-membranous affections; and since this paralysis has a special cause, as well as peculiar symptoms, course, and termination, a special place should be assigned to it among paralytic affections, just, as among dropsies, scarlatinal dropsy is specially recognised. I shall now show, by indirect proofs, that this really deserves to be considered a special form of paralysis.

The result of my statistical inquiries permits me to state in the clearest manner, that secondary paralyses are as rare after other acute diseases as they are common after diphtheria. I do not absolutely deny that paralysis may supervene during convalescence from febrile affections, and may be connected with them in some unknown manner; in the case of typhoid fever and simple pharyngeal angina, the fact appears positive, although one circumstance must be kept in view, namely, that in angina, accompanied with slight symptoms, it is

easy to overlook the existence of a scanty false membrane which has soon dropt off, or which, limited to the posterior surface of the uvula and the pillars of the fauces, has escaped attention,—in other words, that some cases, supposed to be cases of simple angina, are really cases of diphtheria. In the same way, in cases of typhoid fever, if the throat be invariably examined, it will be found that there almost always exists an erythematous angina of the vault of the palate and the pharynx, and which is complicated more often than is generally supposed with the secretion of a pultaceous, and even fibrinous matter,—in fact, a pseudo-membrane of about the same consistence as in muguet: I am, therefore, disposed to explain, by the antecedent existence of an angina of this nature, the small number of cases of paralysis of the vault of the palate, and more general paralysis, which have latterly been observed to follow dothenterite.

I admit the possibility of paralysis consecutive to acute diseases: in twelve years of private practice, I have seen four cases of secondary paralysis, one in a little girl after ataxic pneumonia, another after double pleurisy, and the other two in young women after hepatitis depending upon biliary calculi; but the frequency of this phenomenon is so inconsiderable, the occurrence is so exceptional, that etiologically I attach no value to it. I again refer to statistics in reference to this point. During the same year 1860, I took a note of all the children, boys and girls, who were admitted into my wards, with an exact indication of the diagnosis and result; in no one child, no matter whether the disease was acute or chronic, slight or severe, did I notice any paralytic phenomena, except in cases of diphtheria and well-characterized cerebro-spinal diseases. Thus limiting myself to diseases, as sequelæ of which paralyzes are said to manifest themselves, I subjoin the figures relative to simple angina, pharyngeal or laryngeal, typhoid fever, the eruptive fevers, and pneumonia. Of simple angina, there were 61 cases; 40 of pharyngeal angina; 21 of laryngeal. Of typhoid fever, 12 cases. Of measles, 33 cases; of scarlatina, 12; of variola or varioloid, 4. Of pneumonia, 24 cases. In none of these was there any secondary paralysis.

It would be easy for me to add to these figures, by giving the precisely similar results of my colleagues, but this appears to be unnecessary. Returning, therefore, to my starting point, and considering, on the one hand, the excessive rarity of secondary paralysis in the phlegmasiæ, and in fevers other than dothenterite, and, on the other, its excessive frequency after diphtheria, I believe that it is consistent with a sound pathology to establish a special class of diphtherial paralyzes, and not to allow them to be lost in a vague group of secondary paralysis.

2. *Clinical Researches regarding Diphtherial Paralysis.*

I must premise by saying, that I am not about to attempt to give a methodical description of the affection, but only to furnish some additions (*contributions* as the English would say) to the general history of this paralysis. The cases to which my observations apply, include the 36 already alluded to, as well as two cases which occurred during the course of the present year, and which are not included in my calculations regarding the frequency of the affection.

With reference to the *age* of the patients affected, paralytic phenomena were most frequently observed between the ages of 4 and 6,—this frequency corresponding to the age at which diphtheria is most common: thus out of 35 children, 1 had not attained the second year, 9 were between 2 and 3, 15 between 4 and 6, 5 between 6 and 8, and only 2 between 10 and 15.

Of the 38 patients, 21 were girls, 17 boys. The general total of diphtherial affections during the year 1860, also gives a smaller proportion for the male *sex*.

Season does not appear to have any special connexion with the occurrence of paralysis, although, as we shall see farther on, damp and cold weather have an evident influence in the frequency of pseudo-membranous laryngitis.

The *situation* of the diphtheritic affection is not without influence on the paralytic manifestations; thus, out of the 38 cases of paralysis, 12 occurred after pharyngeal diphtheria; 23 after croup (preceded or not by pharyngeal

diphtheria); in 2 there had been a cutaneous diphtheria; and in the remaining case, the seat of the primitive lesion remained undetermined. It appears, then, that paralysis is most frequent after pharyngeal diphtheria; but this preponderance is not due to this form of the primary affections having a more extended morbid influence, but simply because, being less frequently and less rapidly fatal than croup, it gives more latitude to the ulterior manifestation of paralysis.

With very rare exceptions, diphtherial paralysis, even when it supervenes upon cutaneous diphtheria, commences with the pharynx and soft palate; and the nasal character of the voice, as well as the difficulty of swallowing, are the first *symptoms*; sometimes the affection remains limited to this situation, and other paralytic phenomena do not show themselves; sometimes, on the contrary, either simultaneously or after a variable time, it becomes more or less generalized, extending first to the lower extremities, then to the upper, and to other regions of the body.

Of the 12 cases where the primary disease was pharyngeal diphtheria, 10 were followed by paralysis of the soft palate; this was simple, 4 times; complicated with paraplegia, twice; complicated with diffused paralysis more or less generalized, 4 times; in the other two cases the consecutive phenomena were, in one paralysis of the sphincter ani, in the other amblyopia.

The 23 patients included under the category croup, or pharyngeal diphtheria and croup, and who all, with the exception of two, had undergone tracheotomy, presented almost exclusively pharyngeal paralysis; in 8 of them, liquids or other substances swallowed, passed for some days by the wound; one case only is noted as having been followed by generalized paralysis; in another subject there was "general debility" and persistent aphonia.

It only remains for me to notice a case of paralysis of the soft palate in a child who had presented a diphtherial membrane in the mastoid region and in the auditory canal; and a case of paralysis of the soft palate and paraplegia in a little girl who had been affected with cutaneous diphtheria, but in whom, in spite of repeated examinations, no pseudo-membranous exudation could be seen on the throat.

In only two cases was there any well-characterized paralysis of the rectum or bladder. In one of them, incontinence of the feces constituted the only paralytic phenomenon; in the second, incontinence of urine and paralysis of the sphincter ani were complications of paraplegia; so that the case resembled one of paralysis depending upon an affection of the spinal cord.

There was only one case in which vision was affected to any considerable degree; the subject of it, a boy eleven years of age, was admitted suffering from pharyngeal diphtheria, and during his convalescence, became affected with imperfection of vision, chiefly affecting the right eye; so that he could not read the largest print, whilst, on admission, he had been able to read ordinary characters. These paralytic phenomena were the only ones which were developed; the general sensibility was unimpaired, deglutition was perfect, and he could walk naturally. His sight gradually returned, and he was quite recovered a month afterwards.

It thus appears that paralysis of the soft palate (indicated by the peculiar affection of the voice, and escape of liquids by the nose), and paralysis of the pharynx (of which the symptoms are difficulty in swallowing, and passage of food and liquids into the larynx), are the most common accidents which follow the different manifestations of diphtheria. This greater frequency will be easily understood, when we bear in mind that these parts are the usual seats of the fibrinous exudations, and that the primary affection prefaces the way for the occurrence of paralysis. When the paralysis is generalized, the *diffused* is the form which it generally assumes, affecting unequally the motility and the sensibility, and localizing itself in a special manner in the lower limbs.

It would be difficult, with the observations I have at my disposition, to determine the connexion which exists between the degree of gravity of the primary disease and the seat or extent of the paralytic phenomena. It is generally

admitted that this complication is a proof of the severity of the disease; but facts do not seem to bear this out, as paralysis may follow mild as well as severe cases of diphtheria, and *vice versa*. Indeed, if we trusted to statistics alone, we might be led to believe that the milder the primary disease the more are the consecutive accidents to be apprehended; but here, in order to explain this apparent anomaly, it must be borne in mind that diphtheria generally proves rapidly fatal, and that those who are less severely affected with the primary disease are those who form the majority of the paralyzed.

As it is often noticed that during or after diphtheria the urine contains albumen, it might be asked whether *albuminuria* had not something to do with the occurrence of diphtherial paralysis. It would be necessary, in order to decide this question satisfactorily, to make a regular examination of the urine of all the patients, both during the continuance of the disease and during convalescence; but this examination was neglected in the majority of my cases of diphtherial paralysis. Six times only have the characters of the urine been noted; and no conclusions can be drawn from these observations, for in three cases the urine was albuminous, and in three it was not.

The period of the appearance of the paralytic phenomena cannot without difficulty be determined in a manner absolutely accurate, on account of the difficulty experienced in fixing the date of commencement of the disease: besides, it will be at once understood that during the acute stage of the diphtheritic affection it cannot be precisely determined how much in the alteration of the voice, or the deglutition, or in the general debility of the child, belongs to the specific inflammatory process, and how much should be considered as a real paralysis.

In general, according to my observations, it is only after some days (four to eight on an average) that the functional lesions produced by paralysis of the pharynx manifest themselves in an evident manner. Sometimes, however, it happens that from the very commencement of the disease, or on the day after tracheotomy has been performed, an affection of deglutition has been noticed, characterized by the rejection of liquids through the nostrils, or by the wound in the neck. In other cases, the paralytic phenomena appear immediately after the termination of the angina, or after the cicatrization of a diphtheritic wound. Another class of cases comprehends those in which an interval, more or less prolonged, has intervened between the termination of the primary affection and the appearance of the secondary accidents.

The *mode of evolution* and the order of development of the paralytic phenomena have not been constantly the same; sometimes the paralysis which has commenced, as is almost always the case, with the soft palate remains localized there for a longer or shorter time, and is only propagated to the voluntary muscles after a well-marked interval; sometimes, on the contrary, the paralytic phenomena manifest themselves almost simultaneously in the involuntary and the voluntary muscles.

The *duration* of diphtherial paralysis can only be determined by an examination of the observations relative to the patients who have recovered. In some, the return to the normal condition has taken place rapidly: this, however, was the exception, and only when the paralytic symptoms had been very slight. In the other cases, a month at least may be taken as the mean duration of the paralysis.

The following Table shows the results of my observations on this point:—

Primary Disease.	Consecutive Affection.	Duration.
1. Pharyngeal diphtheria,	Paralysis of pharynx,	2 to 3 days.
2. Pharyngeal diphtheria and croup,	Do.	5 to 6 "
3. Pharyngeal diphtheria,	Do.	12 "
4. Do. do.	{ Paralysis of soft palate, muscles } { of the trunk and the diaphragm, }	12 "
5. Pharyngeal diphtheria and croup,	Paralysis of pharynx,	15 "
6. Do. do.	Do.	19 "
7. Croup,	Do.	20 "
8. Pharyngeal diphtheria,	Pharyngeal paralysis and paraplegia,	22 "

Primary Disease.	Consecutive Affection.	Duration.
9. Pharyngeal diphtheria and croup,	Pharyngeal paralysis,	24 days.
10. Croup,	Pharyngeal paralysis and aphonia,	30 "
11. Pharyngeal diphtheria,	Paralysis of soft palate,	30 "
12. Pharyngeal diphtheria and croup,	Do.	30 "
13. Do. do.	Do. more than	30 "
14. Croup,	Do.	30 "
15. Pharyngeal diphtheria,	Pharyngeal paralysis and paraplegia,	30 "
16. Pharyngeal diphtheria and croup,	Pharyngeal paralysis,	44 "
17. Cutaneous diphtheria,	Pharyngeal paralysis and paraplegia,	60 "

The intercurrent diseases, unfortunately so common in the children's hospital, and to which must be attributed the death of a large number of those on whom tracheotomy had been performed, and of those convalescent from diphtheritic affections of all kinds, do not appear to have constantly exerted a notable influence upon the progress, gravity, and termination of the paralysis. While in one case I saw the invasion of a broncho-pneumonia coincide with an aggravation of the paralytic phenomena, in another I noticed the rapid cure of a paralysis of the soft palate, of the muscles of the trunk, and of the diaphragm, in spite of the supervention of a varioloid affection; again, no effect was produced in a case of pharyngeal paralysis by the occurrence of a diaphragmatic pleurisy, or in a case of generalized paralysis by an attack of measles.

Regarded in itself, in a *prognostic* point of view, diphtherial paralysis is not generally a very serious complication; the half of those affected recovered completely, and when the termination was fatal, death was almost always the result of the primary affection,—of the diphtheria, not of the paralysis.

There are, however, cases where the termination is unfavourable, and the patients die by the direct or indirect effect of the paralytic accidents; thus, for example, if the paralysis have affected the muscles of respiration, an intercurrent pneumonia will prove fatal; if there is difficulty of swallowing, the dangers of inanition are added to those of the primary disease; if there be paralysis of the pharynx in very young children who cannot take and swallow food with sufficient precaution, death may result from the passage of the alimentary matter into the respiratory passages, as I have seen twice,—once in a little girl in the hospital, under the care of Dr Blache, and once in a little boy of eighteen months old, who died suddenly asphyxiated while eating a cake.

The most essential *therapeutical* indications consist in the use of general tonics (bitters, chalybeates, preparations of quinine, sulphurous baths, etc.), and the employment of stimulation directed over all the points where the paralytic phenomena are manifested. With regard to paralysis limited to the soft palate and pharynx, I think that if the functional alterations are very inconsiderable, it is unnecessary to have recourse to the local use of electricity; but if the difficulty of swallowing be well marked, I would apply electricity directly to the soft palate and back of the throat, as I have already successfully done.—*Archives Générales de Médecine*, January 1862.

EPIDEMIC OF TYPHOID FEVER DEPENDENT UPON THE USE OF IMPURE WATER.

DURING the autumn of 1860, there prevailed in the convent of the Sisters of Charity, in Munich, an epidemic of abdominal typhus, which was the more remarkable because at that time there were only a very few isolated cases scattered through the town. From the 1st of June till the beginning of September, there were only two cases of typhoid fever in the convent; but from the 19th of September till the 4th of October, when the population of the convent consisted of a hundred and twenty persons, *thirty-one* of the sisters became rapidly affected, one after the other. Some presented gastric symptoms, others were attacked with regular typhoid fever. Of the fourteen cases of typhoid fever, four proved fatal.

The attention of the medical profession was especially called to this state of matters, because the sanitary state of the town was at that time very satisfactory, and typhoid fever was very rare. It was evident, then, that the cause of this epidemic must be looked for in local circumstances; and, after a careful

examination, it was discovered that the water, used as drink by the inmates, was mixed with substances in a state of putrefaction, and that it constituted the cause of the epidemic. The local circumstances were the following:—The convent is situated beside the general hospital. In the spring of 1860, a well was dug in the latter, having a depth of twenty feet. This well was distant only two feet from the laundry in which the clothes of the patients were washed, and was surrounded by the openings of five drains, intended to absorb the water which ran off from the laundry, and connected with one another by gutters, from which the water was insensibly filtered into the surrounding soil. This water was turbid, had a disagreeable odour, and contained an abundant sediment. As the drains were only twenty or thirty feet from the well, the water in the latter was contaminated by that in the drains. To demonstrate this fact the contents of the drains and the water of the well were submitted to a careful microscopic examination by Dr Hessler, a skilful microscopist. He found, in the sediment of the water from the drains, various kinds of matter, of animal and vegetable origin, in a state of decomposition: some could still be recognised by their original forms, but the greater part constituted only a mass of detritus. This detritus was in the form of a flaky coagulum of a dark green colour, forming little masses, some of which contained inorganic matters, such as sand, particles of lime, etc., which seemed to have constituted the nuclei. Both the water and the sediment contained a large quantity of carbonate of lime, and on the addition of a little sulphuric acid, a strong odour, resembling that of rotten eggs, was disengaged; the same phenomena took place even with the small objects which were submitted to microscopic examination. In addition there were observed organic elements of new formation, such as algæ, spores, vibrones, and monades, which moved rapidly about in the field of vision. The water from the well deposited no sediment; nevertheless, on examining it microscopically, the same elements were observed as in the water coming from the drains, but in a very diluted state, especially as concerns the flaky coagula, the spores, and the vibrones.

It was consequently demonstrated that the water of the well had been contaminated by the contents of the drains. Professor Pettenkoffer, who made a chemical analysis of the water of the well, discovered in it a much larger quantity of organic matters, of lime, and of nitrates, than is contained in ordinary drinking water.

The water of the new well habitually supplied the requirements of the laundry. Between the 17th and 28th September, the time when the epidemic commenced, the water was conducted by pipes into the bath-room and kitchen of the hospital and convent, because, as repairs were being carried on in the bath-room, these establishments no longer received a sufficient supply of water. It was recommended that this water should only be employed for baths, for washing, and for the kitchen, and that the water which was to be used for drinking should be furnished from two wells situated in a court intermediate between the hospital and the convent. Nevertheless, although the attendants in the convent had been sufficiently warned, it appeared, after a careful investigation, that the water which was carried in the evening from the kitchen into the bedrooms of the sisters to be used for the toilette, had been also used for drinking; and all the persons who became ill, acknowledged that they had drunk this water.

If it be considered that the epidemic commenced at the very time when this water, which contained putrefying organic matters coming from the dirty linen of the patients, began to be drunk, we are authorized in concluding that the cause of the typhoid affection existed in the poisonous properties of the water,—a conclusion which is still farther justified by the fact that the epidemic ceased as soon as the water in question ceased to be employed for drinking.—*Nederlandsch Tijdschrift voor Geneeskunde*, and *Revue de Thérapeutique Médico-Chirurgicale*.

TREATMENT OF DIPHTHERIA. BY DR CYRUS POWERS.

In Camp Cayuga, in Auburn, N. Y., we had a good deal of diphtheria, and when I joined the regiment in November, I found that my associate, Dr Benedict, the surgeon of the regiment, had employed what was to me a peculiar mode of treatment for the last two years, with great success, losing none out of more than a hundred cases since he had followed this practice, though he had lost several before he adopted it. On the first appearance of the unmistakable exudation, or as soon thereafter as the case is seen, a thorough emetic of sulphate of zinc is administered. I watched the subsequent cases with much interest, and found that uniformly, in a few hours after the vitriolic emesis, the morbid growth began to disappear, and convalescence rapidly succeeded. Little after treatment seemed to be needed, though in the worst cases we sometimes gave chlorate of potash and quinine. With our change of climate, we have left this fell disease behind us.—*Boston Medical and Surgical Journal*.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLI., 1861-2. MEETING VII.—PATHOLOGICAL.

Wednesday, 16th April 1862.—JAMES SPENCE, Esq., President of the Society, in the Chair.

I. STRICTURE OF THE SMALL INTESTINE.

Dr Haldane showed a specimen of stricture of the small intestine. The patient (a man between thirty and forty years of age) from whose body the preparation was obtained, had been under Dr Begbie's care in the Infirmary suffering from somewhat obscure abdominal symptoms; there was frequent vomiting (the vomited matters often containing *sarcinæ*), no great pain, and almost constant tympanitic distention of the abdomen; the bowels were generally constipated, but there was occasional diarrhœa. The patient gradually became very weak and emaciated, purpurous spots made their appearance over the whole body, and he died from an attack of pleuro-pneumonia. On opening the abdomen, its cavity seemed in great part occupied by what appeared at first to be the dilated and displaced large intestine; the dilated intestine, however, turned out on examination to be the upper five or six feet of the jejunum, the walls of which were much thickened and of a dark colour. The dilated condition ceased immediately above a constriction, below which the intestines were much contracted. The stricture was situated six feet and a half below the commencement of the jejunum; it occurred quite suddenly, and barely admitted the passage of a goose-quill. The whole length of gut involved in this constriction was not more than half-an-inch; and of this, not more than the half was the seat of the real physical stricture, the remainder consisting of the sudden tapering of the altered intestine. There was no thickening of, or deposit in, the coats of the affected portion; and the constriction seemed to have been produced by the cicatrization of an ulcer of a perfectly simple character. The portion of jejunum above the stricture was dilated, and its coats were much thickened; the mucous membrane was thickened, reddened, and in a state of chronic catarrh; the chief hypertrophy, however, was situated in the muscular coat, which formed a layer about the tenth of an inch in thickness. The duodenum was natural. The stomach was contracted and empty; on laying it open, two small simple (perforating) ulcers were found on

its anterior wall, very near the pylorus. One of these was of the size of a threepenny piece, the other about that of a split pea. Each presented a little vascularity at its base; had extended rather in depth than in superficial dimensions, and the larger of the two had completely perforated the muscular coat. There was no lymph or other indication of inflammation upon the serous surface. The pylorus was not contracted. The whole of the intestine below the stricture was much contracted and nearly empty, containing only some mucus, and a very small quantity of thin feculent matter. The small intestines were unusually long, the jejunum and ilium measuring thirty-one feet and a half. The large intestine was of the usual length. The heart was much atrophied, weighing only five ounces and a half.

Dr Haldane said—This case is interesting, both in a diagnostic and in a pathological point of view. From the symptoms present it was presumed that there was a stricture of the pylorus, and from the absence of a cachectic condition, the disease was supposed to be of a non-malignant character. On post-mortem examination, two simple ulcers of the stomach were certainly found, and probably some of the symptoms were referable to their presence. Still, the main lesion was undoubtedly the stricture of the jejunum. As to the cause of the constriction, there may be some difference of opinion. The presence of two simple (or perforating) ulcers in the stomach naturally suggests the idea that the stricture was produced by the cicatrization of a similar lesion. So far, however, as I know, such ulcers do not occur in this part of the intestinal canal; in the great majority of cases they are limited to the stomach; occasionally, though rarely, they are met with in the upper part of the duodenum, but they do not occur in the remainder of the intestinal canal. But for this peculiarity in the seat of this form of ulceration, I should have believed that the stricture in question originated in such a lesion; but in the absence of any undoubted evidence that such ulcers ever occur in this situation, I should not think it reasonable to presume it on the doubtful evidence of a cicatrix. It is, however, a remarkable coincidence that two ulcers, the nature of which was undoubted, should have been found in the stomach. Most of the other possible causes of stricture of the intestine may be dismissed with a very few words. Tubercle and cancer are out of the question, both because the jejunum is not their usual seat, and because there was no trace of either disease elsewhere. Typhoid ulcers in cicatrizing rarely give rise to any constriction, and the lower part of the ilium is their usual seat, which in this case showed no trace of previous disease. On the whole, I think it probable that the ulceration was occasioned by a foreign body, such, for instance, as a piece of fish-bone.

I have met with several cases which have led me to believe that simple strictures of the intestines may not unfrequently be produced by an injury of the mucous membrane of the gut, produced by the presence of a foreign body: of these I may briefly mention two. A patient was admitted into the hospital, suffering from stricture of the rectum: the stricture was situated high up beyond the reach of the finger, and was so tight that a bougie could not be passed through it. The man, however, though much emaciated; had not a cachectic appearance, and was not considered by the physician under whose care he was to be suffering from malignant disease. Six weeks after admission, symptoms of peritonitis set in, and the patient rapidly sank. On post-mortem examination, the large intestine above the stricture was enormously distended, and was perforated at two places; the mucous surface of this portion of the gut had a honey-comb appearance, in consequence of the presence of very numerous superficial ulcerations; these ulcerations in general merely exposed the muscular coat, but in several places this coat had given way, rather apparently by a process analogous to tearing (the result of over-distension), than by an extension of the ulceration; and, as already stated, at two points the serous coat was perforated also. The stricture was situated five inches above the anus, and was so tight that it would not admit the point of the little finger. The cause of the stricture was an ulcer of a simple char-

acter, which measured an inch and a half in length from above downwards, and occupied the whole diameter of the gut. The coats of the strictured portion of intestine were thickened and dense, owing to the presence of much firm fibrous tissue. A large quantity of thin feculent matter, mixed with small hard masses, was accumulated in the dilated portion of the gut, and adhering to the mucous membrane of the intestine, above the stricture, were two or three fish-bones, nearly as large and as sharp as pins, which had become quite blackened by their residence in the intestine. The vermiform appendix of the cæcum was dilated, and contained several small fish-bones and a portion of a larger one; there was, however, no ulceration in this situation. It appeared that the patient had been a sailor engaged in the Newfoundland fishery, and he had no doubt lived at times to a considerable extent upon fish. I think it is exceedingly likely that in this case a sharp fish-bone had wounded and remained in the mucous membrane of the gut; ulceration was in consequence set up, which very probably loosened and set free the foreign body; the ulceration cicatrized, but such contraction resulted as led to the permanent stricture of the intestine. The superficial ulcerations above the seat of stricture had doubtless been occasioned by the irritation produced by the presence of feculent matter which had accumulated there.

The second case occurred shortly afterwards. I was requested by the late Dr Alison to examine, along with him, the body of a lady who had long suffered from stricture of the rectum, and had died in consequence of peritonitis. On post-mortem examination, almost precisely the same appearances were found as in the case just narrated, the only difference being that in this instance the openings in the wall of the intestine were much larger than in the former case, and that a much larger quantity of thin feces had been extravasated into the abdomen. I told Dr Alison the particulars of that case, and mentioned that I thought it very probable that the original ulceration had been occasioned by the presence of a fish-bone. Dr Alison then informed me that his patient had, during her whole illness, insisted that all her sufferings had been occasioned by her having swallowed a fish-bone; that about a year before her death a bone had stuck in her throat; that after remaining there a day or two it had passed down, but that she had never been in good health since. The contents of the intestine, as well as of the peritoneal cavity, were most carefully examined, but no fish-bone or other foreign body could be discovered. This, however, is not to be wondered at; for, supposing that a foreign body had originally become impacted in the mucous membrane, it was just as probable that, when loosened by ulceration, it should drop down below the ulcer and be discharged, as that it should be retained above it. Now, it is quite true that in neither of these cases is it demonstrated that the stricture was primarily occasioned by a fish-bone; but it must, I think, be allowed that considerable probability attaches to that opinion; and, keeping these cases in mind, I am inclined to explain in the same way the occurrence of the stricture of the jejunum which I have just showed to the Society.

II. RUPTURE OF THE JEJUNUM.

Dr Haldane showed a specimen of rupture of the jejunum, and stated that for the following particulars of the history of the patient he was indebted to Mr Annandale:—

“ R. M., 45 years of age, was admitted into the Surgical Hospital, under the care of Professor Syme, on the 8th of March last. He was at that time in a state of collapse, and died a quarter of an hour after admission. After his death his friends stated that, twenty-four hours before admission, whilst lifting heavy sacks filled with bone-dust, he was suddenly seized with pain in the upper part of the abdomen, and turned very sick and faint. His fellow-workmen laid him down on some empty sacks, and as he there began to shiver with cold they gave him some whisky which revived him a little, but as he did not recover sufficiently to walk they took him home in a cab. He continued sick all night, and complained of pain in his belly. A few hours before being brought to the hospital he became insensible, and continued in that state until he died.”

On post-mortem examination the peritoneum was found coated with a layer of soft, recent lymph, and a quantity of a purulent-looking fluid was accumulated in the dependent parts of the abdomen. The coils of intestine were carefully separated, when an opening, which freely admitted the passage of a quill, was found in the jejunum near its mesenteric border, and about three feet below its commencement. The mucous membrane projected through the opening and partially closed it, but on pressure some yellow pultaceous matter escaped from the intestine. The edges of the opening were slightly ragged, had a somewhat infiltrated appearance, and there was hemorrhagic extravasation between the coats of the bowel around the opening. There was not the slightest appearance of ulceration, or of any other disease of the mucous surface of this or of any other part of the bowel. About two feet above the end of the ilium there was found to be a partial obstruction of the intestine occasioned by the existence of very tight adhesions between three adjacent portions of intestine, each about three inches long, the intestine having been twice twisted upon itself, and the serous surfaces being held in contact by firmly organized adhesions. The adhesions were separated with some difficulty, and when the gut was laid open its calibre was found to be markedly diminished. There were pretty firm old adhesions between the great cul de sac of the stomach and the adjacent surface of the spleen. Dr Haldane remarked that there could be little doubt but that in this case death had been occasioned by rupture of the jejunum, produced by violent exertion while raising a heavy weight. This form of injury was rare, for though rupture of the intestines might be readily enough produced by a violent blow, or a fall from a height, it was very unusual for such a lesion to be occasioned by a simple muscular effort. An interesting feature in the case was the existence of an obstruction near the lower end of the ilium. The patient had manifestly suffered from peritonitis at a former period, part of the effused lymph had been organized and formed adhesions between the stomach and spleen, and between portions of the ilium. Contraction of the adhesions gradually occurred, and a considerable obstruction had been occasioned in the lower part of the ilium, so considerable, indeed, that it was surprising that no marked symptoms had been occasioned. Dr Haldane, however, thought it probable that in consequence of the existence of the obstruction, the intestine above it had been kept in a permanently distended condition. This, indeed, was manifest enough after death, but it was difficult to say how much was owing to tympanitic distention, which almost always went along with peritonitis. Supposing that the intestine was habitually distended, it was manifest that this condition must make rupture more probable in the event of any sudden strain being applied to the coats of the intestine. It was also worthy of note that though the individual had lived for barely twenty-four hours after the occurrence of the rupture, there was copious effusion of lymph and purulent matter into the peritoneum. It was by no means easy to say how soon after such a lesion lymph might be poured out; but the period seemed to vary in different persons, and probably according to the nature of the injury. Urine was generally considered a very irritating fluid; but Dr Haldane had examined cases where individuals had sustained rupture of the bladder, and had lived for two or three days, and where, on post-mortem examination, nothing had been found but increased vascularity of the peritoneum. The intestinal contents appeared to be more irritating than the urine; for the escape of even a few drops of feculent matter (as often seen in the small perforations resulting from the ulcerations in typhoid fever) seldom failed to set up violent peritonitis.

III. HÆMORRHAGIC CAST OF BRONCHI.

Dr Haldane showed a preparation for which he was indebted to his pathological assistant Mr Hardie. The patient from whom it was obtained was suffering from tubercular disease of the lungs, and had frequent attacks of hæmoptysis. During one of these attacks he was seized with extreme difficulty of breathing, and was almost asphyxiated. On the following day he expector-

ated the mass which Dr Haldane now exhibited to the Society. It was a firm partially decolorized clot, evidently corresponding to one of the bronchi of the second size, and constituting a perfect cast of all the subdivisions of that bronchus to its smallest divisions in not less than an entire lobe. The expectoration of this mass gave instant relief. On subsequent occasions hæmoptysis occurred, which was sometimes attended with sudden difficulty of breathing, but no hæmorrhagic cast was again expectorated. Death occurred during one of these attacks, but nothing specially remarkable was found on post-mortem examination. Dr Haldane believed that the preparation was almost unique, and remarked that it was difficult to understand how there was sufficient air in the affected lobe to effect the expulsion of such a large and closely fitting mass.

IV. CYSTS OF THE URINARY BLADDER.

Dr Haldane showed a preparation of the urinary bladder from a man 61 years of age, which exhibited two serous cysts. The cysts contained clear fluid, were about the size of peas, and grew from the sub-mucous tissue very near the opening of the urethra. The prostate was not enlarged, but contained numerous minute concretions. Dr Haldane remarked that cysts of the urinary bladder were of extremely rare occurrence; so much so, that Rokitsansky had never met with an example of the lesion. It was worthy of remark that the kidneys contained very numerous cysts, mostly of a microscopic size.

V. EXTREME HYPERTROPHY OF MUSCULAR COAT OF BLADDER.

Dr Haldane showed a urinary bladder, in which great hypertrophy of the muscular coat had taken place. The patient, a man sixty-three years of age, had suffered from extreme irritability of the bladder, and the urine passed was loaded with pus. On post-mortem examination the urinary bladder was found contracted, and the cellular tissue surrounding it was infiltrated with purulent matter. When the bladder was laid open its lining membrane was completely gone, and was replaced by a thin pyogenic membrane. The muscular coat was much hypertrophied, the muscles constituting distinct, sharply defined ridges; the hypertrophy was greatest at the situation where the ureters enter the bladder, a prominent muscular ridge running in a crescentic or triangular form from the one to the other, the apex being directed towards the prostate. Several sacculations of the bladder were in process of formation. The general dimensions of the prostate were scarcely increased, but there was enlargement of the median portion, or so-called middle lobe, which was of the size of a small grape; it was not situated quite centrally, but rather to the right side. The ureters were much dilated, the cause of the dilatation being apparently a constriction at their entrance into the bladder, occasioned by the great hypertrophy of the muscular coat in that situation. On cutting into the left kidney there was well-marked pyelitis, with ulcerative or gangrenous destruction of the ends of some of the cones. The right kidney was similarly affected, but to a less degree. Dr Haldane remarked that the starting point of the disease appeared to have been the enlargement of the third lobe of the prostate, which had probably acted as a valve in preventing the escape of the urine, which, remaining in the bladder, became decomposed and gave rise to cystitis. In many cases, however, the prostate might be enlarged to a still greater extent without such effects being produced.

Mr Spence had never seen a case where the destruction of the lining membrane of the bladder was so complete, and where the folds of hypertrophied muscles were so well marked. He did not think that the mere enlargement of the third lobe of the prostate was sufficient to account for this condition; he had seen thickening and hypertrophy of the bladder connected with it, but had never known ulceration result from it.

VI. BRONZING OF SKIN WITHOUT DISEASE OF THE SUPRA-RENAL CAPSULES.

Dr Haldane stated that in the patient whose urinary bladder he had just exhibited there had been noticed during life well-marked bronzing of the skin.

The discoloration was not continuous, but occurred in patches about the size of the palm of the hand and larger. This appearance was equally marked after death. Accordingly, special attention was paid to the condition of the suprarenal capsules, but they were found to be perfectly healthy.

VII. SCROFULOUS TUMOUR OF TESTICLE.

Mr Spence showed a specimen of a scrofulous tumour of the testicle which he had lately removed from a child three years old. The growth, both in its history and in its local symptoms, simulated malignant disease; but as the cord was not thickened, and the lymphatic glands were not affected, *Mr Spence* had removed the testicle. On cutting into the growth it was found that the body of the gland was occupied by a mass of amorphous matter of a pale brown colour, compressing and causing atrophy of the tubular portion of the testicle.

The case had gone on favourably, the child's health having improved daily after the removal of the tumour.

VIII. TUMOUR OF THE ORBIT.

Mr Spence showed a small fibroid tumour which he had removed from the orbit of a young man. The tumour occupied the position of the lachrymal gland, and had either displaced that body, or occasioned its atrophy, as it could not be felt when the growth was removed. The tumour was firmly adherent to the periosteum covering the edge of the orbit, so that, as was seen in the preparation, a portion of that texture had required to be removed.

IX. CYSTIC SARCOMA OF THE MAMMA.

Mr Spence showed a very perfect specimen of cystic sarcoma of the mammary gland. When an incision was made into the growth, minute cysts were found scattered through its whole structure, and one large cyst had commenced to inflame and suppurate. *Mr Spence* remarked that whilst single cystic tumours were not uncommon in the mammary gland, the true cystic sarcoma, of which this was a very perfect specimen, was a rare form of disease.

X. ERECTILE TUMOUR OF THE HAND.

Mr Spence showed a specimen of an erectile tumour which had grown from the palmar region of the hand of an infant. The growth had been noticed immediately after birth, and had soon begun to enlarge rapidly. When the infant was ten weeks old, it was brought to the Infirmary. As the tumour was evidently increasing rapidly, it was strangulated by means of a ligature passed around needles which had been introduced below the growth. The mass separated, and at first the parts looked well; but after a time, a vascular growth showed itself at the bottom of the wound, bleeding took place, and as the disease resisted pressure and topical applications, *Mr Spence* had amputated the forearm. At the time of the operation the infant was twelve weeks old; it was taken home cured about three weeks afterwards.

XI. PSEUDO-MALIGNANT GROWTHS.

Mr Spence showed two specimens of pseudo-malignant growths. The first of these was a tumour which he had removed from the occipital region of a woman aged eighty-three. The tumour had existed for sixty years, but had only lately commenced to grow rapidly, and to be accompanied with intense pain. On examination of the scalp, two or three simple encysted tumours were observed, and the patient stated that the larger growth had been originally like them. Although the tumour had a suspicious resemblance to a malignant growth, yet, guided by the history and by the fact that the constitution of the patient was unaffected, *Mr Spence* had not hesitated to remove it. When cut into, the growth certainly presented all the appearances of medullary sarcoma. The tumour was adherent to the skin, but the large open surface left after the operation had healed and granulated kindly without any fungating appearance or other manifestation of malignant degeneration.

In the *second* case, a tumour had existed on the foot of an old man for a period of twenty-five years. It had grown very slowly, and had occasioned no pain until lately, when, after some local treatment, it began to enlarge rapidly, and to give rise to intense suffering. When seen by Mr Spence, the patient was in a state of great exhaustion, and although the growth had a very malignant appearance, he had resorted to amputation, and the case had gone favourably as yet.

In reference to these cases, Mr Spence remarked that he considered them important, as bearing on the principles which ought to regulate our practice in regard to certain tumours where the general symptoms might seem to contraindicate operation. He believed that the history and vital manifestations of a tumour indicating the original character of the growth was of greater importance than anything in its mere structural anatomy, as deciding the question of operative interference.

In the specimens before the Society, as well as in many others which he had removed, where the tumours had been originally simple, but had degenerated, and where the patients had seemed affected with malignant cachexy, the tumours presented distinct local alteration or degeneration into structures similar to, or identical with, that of heterologous growths. Yet this seemed merely a local change, for from experience he had found that there was this great difference between these and truly malignant growths, that when the former were removed, the general health improved, enlarged glands disappeared, and there was no tendency to reproduction of the tumour; whereas, in a truly and originally malignant growth, operative interference under such circumstances, instead of affording relief, would be followed by the more rapid development of the disease, both locally and generally. He (Mr S.) believed the degeneration to be entirely local and devoid of that constitutional taint which characterized true malignant tumours.

Professor Miller had listened with much pleasure to the sound practical sense of Mr Spence's remarks with regard to the degeneration of tumours, which presented a striking contrast to the transcendental views entertained by some modern pathologists. In this very Society he had heard the idea of the degeneration of tumours laughed to scorn. Professor Miller had been long satisfied that tumours do degenerate; that is, that a growth originally simple, might, after a time, in consequence perhaps of some local irritation, or of a change in the general health, change its vital characters, begin to grow more rapidly, and become evidently malignant. Mr Spence's cases were additional demonstrations of this fact, for fact it was, explain it how we might. This afforded a very important rule for the treatment of tumours. No matter how simple a growth was, it ought to be removed, for there was always a risk of its undergoing degeneration, and then an operation would be performed under much less favourable circumstances. There was only one point open to discussion, which was, whether in general these degenerated growths produced as little effect upon the constitution as had been noticed in Mr Spence's cases. Professor Miller's experience was rather the other way, and he was inclined to believe that these degenerated growths produced as injurious effects on the constitution as if they had been originally malignant.

Mr Spence thought that when a growth originally simple had undergone degeneration, we might interfere with much better chance of success than where the tumour had been originally malignant. He had lately amputated the thigh in an individual in whom the inguinal glands were enlarged, and where he would not have thought of operating unless he had been satisfied from the history of the case that the growth had been originally simple. Accordingly, after the operation, the glands returned to their natural size, and perfect recovery took place. He had also removed an enormous tumour of the mamma from a woman in whom the axillary glands were enlarged and tender; here, as in the other case, being satisfied that the disease had not been originally malignant, he had operated, and with success. About eleven years ago he had amputated on account of an enormous tumour of the arm, accompanied

with all the local symptoms of malignancy: the patient was in a state of extreme exhaustion, but made an excellent recovery and never had the slightest return of disease. These and many similar cases where long periods had elapsed since the operation, led him still to maintain the views he had already expressed.

Professor Miller ascribed the less development of the cachexy in these degenerated tumours to the circumstance that the duration of malignancy had been less than where the disease had been malignant from the first.

XII. ANEURISM OF THE AORTA RUPTURED INTO THE TRACHEA.

Mr Priddle showed a specimen of aneurism of the aorta. The patient, a very fat woman, had experienced no distressing symptoms until twenty-four hours before death; there was no swelling at the root of the neck, little pain was complained of, and there had been no expectoration of blood until the fatal hæmorrhage occurred. When seen by *Mr Priddle* the patient was suffering from very distressing difficulty of breathing, which was aggravated when she lay on her back or side, but was much relieved on sitting up. The sound of the breathing and cough had a markedly laryngeal character. As the symptoms were urgent, and there was imminent danger of death from suffocation, the propriety of performing tracheotomy occurred to *Mr Priddle*. But while he was in the act of examining the throat of the patient, in order to make out the state of the epiglottis, she suddenly spat up a large quantity of blood, and almost instantly expired. On post-mortem examination an aneurism about the size of a bantam's egg was found to arise from the transverse portion of the arch of the aorta; the sac was empty, and communicated, by means of a ragged opening which admitted a quill, with the trachea just above its bifurcation. The left carotid artery arose from the immediate neighbourhood of the sac, and at its origin was almost completely obstructed owing to a remarkable degree of thickening of its coats.

Mr Spence remarked that it was fortunate that tracheotomy had not been performed in this case, or the operation would certainly have got the credit of the patient's death. There had been a good deal of discussion as to the propriety of performing tracheotomy in cases of aneurism; the rule, however, seemed to be, that when the symptoms were evidently due to spasm, the operation might be performed as a palliative measure in order to save the patient from suffocation, but that when the difficulty of breathing was due to direct pressure upon the air-passages, surgical interference was unwarrantable.

XIII. EXCISION OF THE KNEE-JOINT.

Mr Edwards, in the first place, showed the articulating surfaces of the femur and tibia which he had removed lately. The patient, a little girl of thirteen, had suffered for three years from disease of the knee-joint, and the limb had been condemned to amputation by two or three surgeons. *Mr Edwards*, however, adopted the milder alternative of excising the joint, and only found it necessary to remove a thin slice of the bones, and he hoped that the limb would grow to a certain extent. Eight weeks after the operation the wound was healed, and the patient could walk across the room. The second case was that of a man about twenty-two years of age, who had suffered for several years from disease of the knee-joint, which had occasioned great pain. The joint was excised about three weeks ago, and the wound was already nearly healed. In both of these cases the patella was removed at the same time as the ends of the femur and tibia. There was a common feature in the two cases, inasmuch as a large abscess had formed in the thigh of both patients. In the child there was an abscess which extended as high as Poupart's ligament; it would evidently have been useless to open and treat this abscess, as it depended upon the disease of the joint, and its presence was also a contra-indication against amputation. In the case of the man there was also pretty extensive suppuration, but in neither did suppuration continue after the performance of the operation.

XIV. CONICAL STUMP.

Mr Edwards showed a specimen of a conical stump. The thigh had been amputated by an excellent surgeon, the late Dr Paul of Elgin, whose results had generally been very satisfactory, and who had no doubt performed the operation most skilfully in the present case. The muscles, however, had retracted to such a degree as to produce a remarkably conical stump, which presented a very sharp edge. The stump was so tender, and started so constantly, that it was impossible for the patient to employ an artificial support, and Mr Edwards had therefore amputated the limb higher up.

Mr Spence (having inquired the age at which the original amputation had been performed, and having been informed that it was twelve years) remarked, that in amputation of the limbs of very young persons, no matter how carefully the operation was performed, there was a great risk of having an unsatisfactory stump; the reason being, that in young subjects the end of the bone did not atrophy, but continued growing and became elongated: as the soft parts were tending to retract while the development of the bone was going on, there was a double danger of a conical stump. Mr Spence had in his museum a preparation where the arm had been amputated by the late Mr Liston: the bone not only projected and terminated in a narrow point, but formed a perfect hamular process, being turned back upon itself.

XV. MEDULLARY TUMOUR OF THE LEG.

Dr Watson showed a specimen of a medullary tumour of the leg, developed from the head of the tibia, for which he had successfully amputated the thigh. The tumour had commenced about two years ago in the substance of the bone, and gradually developed itself outwards, involving the head of the fibula, the interosseous ligament, and the *tibialis anticus* muscle. It had also latterly implicated the cartilage, encrusting the inner articulating surface of the head of the tibia. On making a section of the tumour through the cartilage, while the central part was of its natural thickness, towards the margins it was found to have undergone a transformation by which its cartilaginous character was destroyed, and fibrous tissue containing cells, exactly like those contained in other parts of the tumour, was observed to have become developed. Tracing this development from the altered into the sound cartilage, the changes analogous to those which occur in the ulceration of cartilage were seen to occur, viz., the enlargement of the corpuscles, the multiplication of cell contents, the diffusion of them in the now granular and fibrillating hyaline substances. There was, however, this difference in the present instance, that the cells and fibrous tissues retained their cohesion and constituted a part of the medullary mass. Here and there the cartilage cut grittily under the knife, and in these parts calcification of the cartilage was found to be in progress.

XVI. LACERATION OF ARTERIES.

Dr Watson showed two specimens illustrating the effects of laceration upon the tunics of a large artery. In one the femoral artery had been injured, and here the brittle inner coats were found to have given way upon the same level, as if cut by the application of a ligature; while the external coat had, from its tough textures, undergone further extension, separating the divided extremities of the inner coats from each other, and affording a double funnel-shaped pouch, within which coagulation had occurred, and the further circulation through the vessel been intercepted. The second preparation was from the popliteal artery of the same limb: here the vessel was completely torn through, and as the circulation had been arrested above as already described, the changes, so far as the vessel itself was concerned in the spontaneous arrest of hæmorrhage in cases of laceration of a large artery, were well displayed. The inner coats had given way perfectly regularly as if cut with a knife, and retained their adhesion to the external coat without retraction or contraction: beyond this point the external coat had been drawn out into a funnel-shaped pouch, within which coagulation would no doubt have taken place had any blood

reached this point. The specimens showed the fallacy of the doctrine of the "crisping up," or of "the contraction and relaxation of the inner coats of the artery," in cases of laceration of large vessels, which is still maintained by some to be in such cases the cause of the spontaneous arrest of the bleeding. The patient from whose limb these specimens had been obtained was an engine-driver—over whose thigh his engine had passed, necessitating amputation through the trochanters. The operation was performed by Dr Watson two hours after the accident, and though the patient had been extremely reduced both from shock and loss of blood from the extensively mutilated surfaces resulting from the injury, he had made a good recovery.

XVII. MODIFICATION OF SIGNORINI'S COMPRESSOR.

Professor Miller mentioned, that while lecturing lately on the treatment of popliteal aneurisms by compression of the femoral artery, he had shown his class Signorini's compressor, and had happened to remark that it was a very good instrument, but that it had the disadvantage that the pressure was applied at only two points, but that this defect might perhaps be remedied by the introduction of the elastic element. A day or two afterwards, a pupil sent in a paper accompanied with a drawing, giving an account of a modification of the instrument and introducing the elastic element into it. *Professor Miller* showed the paper to Mr Young, the instrument-maker, who was pleased with the idea, and constructed a compressor upon this model. The instrument consisted of a Signorini's compressor with the compress jointed to the end of one arc of the apparatus, so as to play upon a piece of strong caoutchouc sheeting, thus combining in a most simple manner the elastic element with simplicity and facility of application.

XVIII. SPONTANEOUS DISINTEGRATION OF A CALCULUS.

Professor Miller mentioned the case of a middle-aged man who called on him and gave him the following history:—For some years he had suffered from the usual symptoms of stone in the bladder, when, after the use of an alkaline preparation, he began to pass fragments of stone and did so for some time. The fragments were produced and found to consist of uric acid. Mr Miller sounded the patient and no calculus could be detected. The patient must therefore have undergone a spontaneous cure; and the case was interesting inasmuch as the breaking up of the calculus had not caused any irritation or inflammation, as is very often the case under such circumstances; indeed, it appeared that while the process of disintegration and evacuation of the fragments was taking place, the patient was going about, as he was more comfortable when walking than when sitting still or lying down.

MEETING VIII.

7th May 1862.—JAMES SPENCE, Esq., *President*, in the Chair.

I. EPIDEMIC OF SCARLET FEVER.

Dr James D. Gillespie read an account of an epidemic of scarlet fever which occurred at Donaldson's Hospital during the winter of 1861–62.

(This paper will be found at page 1091 of the present number of this Journal.)

Dr Sellar had listened with much pleasure to Dr Gillespie's paper. The importance of such accounts by well-qualified observers could scarcely be over-estimated; for as the children at the different periods were in precisely similar conditions as to diet and other hygienic arrangements, there was a means of accurate comparison between different epidemics which could not be met with under any other circumstances. Dr Sellar did not in general entertain a very favourable opinion of the knowledge to be derived from statistics; one great objection to accepting unreservedly the conclusions based upon statistics was that all were not equally well qualified to observe, and that equally good observers might view the same disease in different lights, and might even give different names to the same series of conditions. This objection was, however,

got rid of when the same person recorded the results of his experience on different occasions, for then the faculties, and he might add the senses, of the observer were always the same. The epidemic described by Dr Gillespie did certainly not resemble the scarlet fever which prevailed in Edinburgh at the same time; at Donaldson's Hospital a milder variety of the disease manifested itself than had been generally seen here in private practice. This might perhaps be accounted for by the circumstance that the children in that institution were in very favourable hygienic conditions, being well fed, in well-aired apartments, and carefully looked after. Dr Sellar might state that nothing connected with scarlatina appeared to him more important than a recognition of the fact that albuminuria and dropsy might not make their appearance for a considerable time after the acute symptoms had disappeared; he considered albuminuria to constitute a part of the disease. It was true that well-marked cases of scarlatina might occur without albuminuria, but these cases he looked upon as exceptional. Dr Sellar remembered an epidemic of scarlet fever which prevailed in Edinburgh, at a time when he himself and his pupils saw a large number of patients about the Cowgate and neighbourhood in the course of dispensary practice. The disease was extremely slight, but subsequently numerous cases of dropsy occurred; the dropsy was generally discovered when the children returned to school after the holidays, the autumn of that year having been cold and wet; a good many of the children so affected died: on post-mortem examination there was generally found dropsy of the serous cavities, congestion of the kidneys, and not unfrequently inflammation of the lungs.

Mr Benjamin Bell had been much struck by the symptom of the scream which had been noticed in the fatal cases described by Dr Gillespie. It had occurred to him that some cases recorded by Dr Shearer in the present (May) number of the *Edinburgh Medical Journal* might throw some light upon this symptom. In Dr Shearer's cases screaming was an important feature, and it appeared to depend upon disease of the cerebellum. The only post-mortem examination which Dr Gillespie had obtained had shown the existence of congestion of the medulla oblongata, and it was not improbable that there was a similar condition of the cerebellum. Mr Bell could not say that his own experience, acquired either in public institutions or in private practice, quite agreed with that of Dr Gillespie with regard to the occurrence of albuminuria; he had met with it much more frequently than Dr Gillespie had done; he did not believe that this symptom was present in every case, but it certainly was very often met with, especially when the eruption did not come well out.

Dr Browne would like to know from Dr Gillespie whether any difference in the susceptibility to scarlet fever had been noticed between deaf mutes and hearing children, in other words, between the perfectly and imperfectly developed children. It had been noticed, especially by French physicians, that, in common with idiots, deaf mutes were generally exempted, to a great extent, not only from epidemic but from ordinary infantile diseases. No doubt there might have been much laxity of observation, still he (Dr Browne) believed there was some truth in the statement. In the case of the deaf mutes in the establishment in Paris it was quite possible that they might be protected by their isolation from epidemic diseases, and the same might be true of idiots resident in large establishments; but in the case of idiots and imbeciles residing with their relatives, no such explanation was possible. Dr Browne had no doubt but that in this country idiots and imbeciles had a great though not a perfect immunity from infantile diseases.

Mr Priddle had noticed the symptom of screaming in a fatal case of scarlatina; it occurred three days before death, on only two occasions, with an interval of about an hour between them. The sound of the screams was quite peculiar, being remarkably loud and intense. No post-mortem examination had been obtained; but he thought it was very likely that there was some lesion at the base of the brain.

Dr Peel Ritchie would look for dropsy rather in cases where the eruption had

been feebly marked than where it had been copious; not perhaps that it depended upon want of the eruption so much as upon want of care, as was likely to be the case when the symptoms had been very slight. With regard to the cry which had been heard in the fatal cases, he thought this was connected with the meningitis found at the base of the brain.

Dr Haldane had a very few remarks to make on the subject of albuminuria. There could be no doubt but that the presence of albumen in the urine was of very common occurrence in cases of scarlet fever, and that, on the other hand, cases occurred where it was not detected: it must, however, be borne in mind, that albuminuria was sometimes a very temporary phenomenon, so much so that in order to discover it, not merely daily, but almost hourly examinations of the urine were necessary. The presence of albumen in the urine was an indication of the irritation of the kidney, produced by the scarlatina poison. This poison might eliminate itself by various channels, or might produce various classes of symptoms. Sometimes the effect produced upon the nervous system was so intense that death occurred at a very early period of the disease, with scarcely any local lesion. Sometimes the throat was chiefly affected, and there might be sore throat of the highest degrees of severity. At other times the irritation was chiefly confined to the skin, and this was manifested by the abundance of the eruption. Finally, the kidney might be chiefly involved, and there might be copious albuminuria while the throat and skin might have been but little affected. *Dr Haldane* ascribed the absence of albuminuria in *Dr Gillespie's* cases to the feebleness of the scarlatina poison. It would be remarked that in most of the cases recorded all the ordinary symptoms of scarlatina had been present in a very modified form; the sore throat had been slight, and the eruption very imperfectly marked; in the same way the irritation of the kidney had not been so great as to determine the presence of albumen in the urine. Where, however, the function of the skin had been interfered with by exposure to cold and wet, albuminuria and dropsy made their appearance. The effect of cold was to check the function of the skin; matters which should have been discharged by that channel accumulated in the blood, and endeavoured to eliminate themselves by the kidneys; the irritation of the kidneys already existing was thereby increased; congestion of the organs occurred, and not only water but serum was poured out from the Malpighian bodies.

Dr Thomas Balfour observed, that his experience of the late epidemic was very similar to that of *Dr Gillespie*. The disease had in general been very mild; so much so, that he had several times been called to see children who had been attending school until they had become thoroughly anasarca; and on questioning the parents regarding these cases, they had stated that they had not seen any eruption. In these cases the urine was dark coloured, and had the characters usually met with in acute renal dropsy. While the majority of the cases had been mild, *Dr Balfour* had seen others where there were serious nervous symptoms from an early period, and where a fatal result rapidly occurred. In one case the child was taken ill in the forenoon, and on the afternoon of the same day delirium set in; this was accompanied with jactitation of the limbs, and the child died on the second or third day. In this case he gave carbonate of ammonia, but not in large doses. The other children of the family had been sent away when the first turned ill, and some time after his death they were brought back. One of them took scarlatina; for the first two days the disease appeared to be mild, but then the same symptoms set in and death took place. It had been stated that malignant scarlet fever was very amenable to treatment by carbonate of ammonia, and accordingly, in the last-mentioned case, *Dr Balfour* had given it in four grain doses every two or three hours. At first it had seemed to give relief, the child became calm and fell asleep; but the favourable symptoms did not continue, the rash did not come out, and the child died in two or three days. With regard to the scream mentioned by *Dr Gillespie*, *Dr Balfour* had not met with it in his cases; but in a case of hydrocephalus he had witnessed this symptom to a most painful degree; so distressing was the sound, that whenever a paroxysm

came on, the mother ran out of the room. The child would be quiet for a time, and then go on shrieking continuously for an hour.

Dr Gillespie said that, like *Dr Ritchie*, he believed that the screaming in the fatal cases depended upon meningitis at the base of the brain. He had heard the same sound occasionally in certain stages of ordinary meningitis. With regard to the comparative immunity from epidemic disease supposed to be enjoyed by deaf mutes, he might state that in 1853 the number of deaf children affected immensely preponderated, and he had thought at the time, that as they were in general not so healthy as other children, they were less able to resist the scarlatina poison. In the epidemic of 1855, as well as in that of last year, especial attention had been directed to this point, and it had been found that the number of deaf and of hearing children affected was proportionally very much the same. One might have expected that the deaf mutes should have been less liable to scarlatina than the hearing children, because many of the former had had the disease before, and their deafness had been caused by supuration of the ears following scarlet fever.

II. CASE OF FRACTURE OF THE NECK OF THE SCAPULA.

Mr Spence showed a preparation of fracture of the neck of the scapula, which simulated dislocation of the shoulder-joint, and read an account of the case, which will be published in a future number of this Journal.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

THE present Report gives the number of births, deaths, and marriages registered during the quarter ending 31st March 1862, in the 1007 districts into which Scotland is at present divided for the purposes of registration. It appears from the Returns that the births, deaths, and marriages are all above the average of the corresponding quarter of previous years.

BIRTHS.

27,107 births were registered in Scotland during the first quarter of 1862. This gives the proportion of 354 births in every ten thousand persons of the estimated population, or one birth in every 28 persons—the average of the corresponding quarter of the six previous years being only 344 births in every ten thousand persons. The birth-rate, therefore, has been exceedingly high, and was only slightly exceeded in the year 1860, when the proportion for the corresponding quarter was 356 births in every ten thousand persons. Of the children born, 13,966 were males, and 13,141 females, being in the proportion of 106·2 males for every 100 females, or a slightly higher proportion of males than usual.

The proportion of births in the town and country districts varied considerably. Thus, in 126 town districts (embracing almost all the towns with a population of 2000 inhabitants and upwards) 15,486 births were registered; while in the 881 country districts (embracing the remainder of the population of Scotland) 11,621 births were registered,—thus indicating a proportion of 386 births to every ten thousand persons living in the town districts, but only 318 births in a like number of persons in the country districts.

Of the 27,107 births, 24,474 were legitimate, and 2633 illegitimate, being in the proportion of one illegitimate in every 10·3 births, or 9·7 per cent. of the births illegitimate.

DEATHS.

19,412 deaths were registered in Scotland during the quarter ending 31st March 1862, being in the annual proportion of 253 deaths in every ten thousand persons of the estimated population. This is considerably above the average mortality of the corresponding quarter in the seven previous years, which was only at the rate of 237 deaths in every ten thousand persons; and yet it is below the proportion which occurred during the corresponding

quarters of 1855 and 1860, when the death-rates were so high as 264 and 265 deaths respectively, in a like population.

The deaths in the town districts greatly exceeded those in the country districts. Thus, in the 126 town districts, 11927 deaths were registered; while in the 881 rural districts the deaths only numbered 7485. This indicates an annual proportion of 298 deaths in every ten thousand persons in the town districts—a very high mortality; but only 205 deaths in a like population in the rural districts.

Of the deaths, 6897 were registered in January, 5820 in February, and 6695 in March; thus indicating 222 deaths daily during January, 208 daily during February, and 216 daily during March.

INCREASE OF THE POPULATION.

As the births amounted to 27,107, and the deaths to 19,412, the natural increase of the population was 7695 persons. From this, however, have to be deducted the numbers who emigrated during the quarter. From a Return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 31st March 1862, there emigrated from the ports of Great Britain and Ireland 15,159 persons, of whom 1197 were ascertained to be of Scottish origin. If to that number 249 be added, as the proportion whose origin was not ascertained, the total number of Scottish emigrants during the quarter would amount to 1446, which, deducted from the excess of births over deaths, would leave 6249 as the increase of the population during the quarter.

MARRIAGES.

4750 marriages were registered in Scotland during the first quarter of 1862, being in the annual proportion of 62 marriages in every ten thousand persons of the population. This is a proportion above that of the average of the corresponding quarter of the seven previous years, which was at the rate of 60 marriages in a like population, but is greatly below the marriage-rate of England, which for the corresponding quarter amounts to 70 marriages in every ten thousand persons.

Of the above marriages, 2914 were registered in the 126 town districts, and 1836 in the 881 country districts—indicating an annual proportion of 73 marriages in every ten thousand persons of the estimated population in the town districts, but only 50 marriages in a like population in the country districts.

Of the 4750 marriages, 2316 were registered during the month of January, 1203 during February, and 1231 during March.

HEALTH OF THE POPULATION.

Much sickness prevailed during the first quarter, more especially during the months of January and March. Influenza, in numerous instances ending in gastric, or in a mild form of typhus, fever, was prevalent; and inflammatory affections of the respiratory organs, more especially in the forms of bronchitis and pneumonia, were of frequent occurrence. In several districts a low form of typhus fever affected considerable numbers of the inhabitants, without its spread being traceable to any special deficiency in sanitary arrangements. The persons affected seemed to be attacked more as if it were a regular epidemic, arising from purely atmospheric influences; and it would appear that most of the cases of fever which are commonly met with in the various districts do so originate, although our sanitary reformers, with one idea alone as to the origination of disease, too often erroneously attribute that complaint to faulty sanitary arrangements. That faulty sanitary arrangements will aggravate the disease once originated, and impair the health of those living in unwholesome and unaired houses, besides rendering them more prone to the attacks of disease, no one will deny; but it is time that we should open our eyes to the true facts of the case, and allow that almost all our diseases really originate in atmospheric agencies, and that our sanitary arrangements are mainly of use in strengthening the body against these agencies, and enabling it more easily to resist them, or throw off disease when affected by them. Various affections

of the throat, in many instances assuming the form of diphtheria, attended the pulmonary attacks during the quarter, and were the cause of numerous deaths. Hooping-cough was epidemic in many districts, and caused many deaths; while measles in other districts assumed the epidemic form, but was in general of a mild type. The registrars in some cases note the comparative fatality of the disease, and these facts are of some value in a medical point of view. Thus, the Registrar of Kirkcaldy mentions that, of 150 cases of measles, only five proved fatal, these being complicated with bronchitis.

WEATHER.

January was a comparatively mild month for the season, with a mean temperature rather above the average, an unusual amount of mild south-westerly breezes, a consequently greater fall of rain, and a greater degree of humidity of the atmosphere than is usual during that month. This milder weather was, however, often interrupted by the wind suddenly veering to the north and east, and blowing with a keenness all the more severely felt, and the more detrimental to the health of the people, from the previous mildness. Influenza, and inflammatory affections of the respiratory organs, were accordingly very prevalent during the month, and a greater amount of sickness resulted. February, again, was a comparatively mild, balmy month, during almost the whole of which the winds blew from the west and south-west during the day, when people were exposed, the cold easterly breezes being chiefly confined to the night. During this month the cases of sickness diminished in number, and the general mortality considerably abated. March, however, proved a truly wintry month, even the first week being characterized by severe frosts (the temperature even falling to 10° Fahr.), and by the ground being deeply covered with snow. Several snow-storms, attended or followed by more or less severe frosts, and cold arid east and north winds occurred during the month; and March presented the unusual anomaly of having a mean temperature lower than that of both January and February. Under these adverse meteorological phenomena, the general sickness increased; and the mortality, which, during the mild month of February, had fallen to 208 deaths daily over Scotland, rose again during March to 216 deaths daily. So dependent are we in Scotland for our health and life on atmospheric agencies.

The mean barometric pressure, corrected and reduced to the sea-level, was 29·686 inches during January, 30·052 inches during February, and 29·698 inches during March. The mean temperature of the quarter was 38·8°; being 38·4° during January, 40·1° during February, and 37·8° during March. The mean degree of humidity of the atmosphere was 90 in January, 89 in February, and 88 in March. The number of days on which rain, sleet, or snow fell was 21 in January, 11 in February, and 16 in March, with a mean depth of water of 5·32 inches in January, 1·88 inch in February, and 3·63 inches in March. Winds with an easterly point blew 8 days in January, 12 in February, and 19 in March; those with a westerly point 14 days during January, 9 during February, and 6 during March.

DEATH OF PROFESSOR SCHROEDER VAN DER KOLK.

WITH feelings of the deepest regret we announce the decease of the excellent and distinguished Professor of Medicine in the University of Utrecht, of which sad event intelligence has just reached us from Holland. Professor van der Kolk had apparently recovered from the abdominal affection under which we some time ago stated he was labouring, when fever, the result of taking cold, in a few days reproduced the whole train of symptoms, under which he finally sank on the evening of May 1. The irreparable loss which has thus been sustained cannot be better described than in the words of the friend who has furnished us with the foregoing particulars: "Utrecht," he observes, "has thereby lost one of its most estimable citizens, the University one of her ornaments, society one of her greatest benefactors, science one of her most devoted

cultivators, his numerous household a loving father, their mainstay and their hope. J. L. C. Schroeder van der Kolk, Professor of Medicine in the University of Utrecht, Inspector of Institutions for the Insane in Holland, Knight of the Order of the Lion of the Netherlands, and of the Swedish Order of the Polestar, and Commander of the Order of the Oaken Crown, member of numerous societies both at home and abroad, esteemed and beloved by all for the endowments of his head and heart, which he employed in the interests of society, succumbed at the age of sixty-five to a protracted illness, which had long undermined his health and confined him to a sick bed. He lived in the conscientious discharge of duty, and died in calm dependence on God's loving mercy, convinced that he was called to another sphere of action, to which he believed this life to be but the introduction." Having in our number for March 31, 1860, given a short biographical notice of the highly-gifted man whose decease we now deplore, we have little to add to the foregoing save our conviction of the magnitude of the loss which medical science in particular has sustained in his removal. His memory must ever live as that of one of the most distinguished physiologists and pathologists of modern times, while the improvement he effected in the treatment of the insane in his native country entitles him to be classed among the benefactors of the human race.—*Medical Times and Gazette*.

VARIETIES.

RESIGNATION OF PROFESSOR C. D. MEIGS.—At the close of the last lecture term of the Jefferson Medical College, in Philadelphia, Professor Charles D. Meigs resigned the Emeritus Professorship of Obstetrics and the Diseases of Women and Children. Dr M. has been connected with the College for twenty-five years, and he now takes leave of it and of the more active duties of the profession.

THE CASE OF THE LUNATIC CLARK.—We understand that the mother of Clark, who murdered a tax-collector at Newcastle, received an additional allowance from the poor's-rate when he was young, because of his insanity. If this be correct, the conduct of the case is even more discreditable than generally believed.

APPOINTMENT OF ACTING SURGEONS IN THE NAVY.—We are glad to learn that for some time past all candidates for the office of acting surgeon in the navy have been subjected to a rigid examination. This has something of the character of shutting the door after the horse is stolen, but will no doubt do some good. If this rule had been adopted in the navy, as it was from the first in this State, with reference to the army, we should not have to regret the appointment of several knaves and charlatans, whom we might mention, to offices of such grave responsibility. We shudder at the probable fate of the subjects of the surgical treatment of some of those to whom heretofore this responsible trust has been confided. Is it too late, even now, to sift out the chaff from the wheat among those already holding commissions, by requiring them to pass a satisfactory examination?—*Boston Medical and Surgical Journal*.

RE-VACCINATION AMONG THE NEW YORK STATE TROOPS.—From the Report of the Surgeon-General of the State of New York—for a copy of which we are indebted to Dr W. C. Wey, of Elmira, who has charge of the military hospital at that place—it appears to have been intended by the authorities that every soldier should be vaccinated before leaving the State, even though evidences of a former vaccination might exist. A general order to this effect was issued to all the regimental surgeons, with sufficient vaccine matter to carry it into execution. The Eastern Dispensary of the City of New York furnished gratuitously all the virus required—the amount supplied being sufficient for over 50,000 men—and the order was rigidly complied with. The whole

number reported as vaccinated by the different surgeons up to December 1, 1861, was 9248. Among this number there existed evidences of previous vaccination upon 7586. Whole number found susceptible to the virus, 2403. Number found susceptible upon whom existed evidences of previous vaccination, 1551. Of 1045 persons included in last statement, whose ages were ascertained, 847 were between 18 and 25 years; 150 between 25 and 35; 48 between 35 and 45. It thus appears that 25.9 per cent. of all vaccinated, and 20 per cent. of those who showed evidence of previous vaccination, were found susceptible to the virus. One case of varioloid is also reported in a man showing all the distinctive marks of successful vaccination, and also one case in which an individual who had had the smallpox was found susceptible to the action of the virus.—*Ibid.*

EIGHT CHILDREN AT A BIRTH.—[We copy the following from the *Boston Medical and Surgical Journal*. Although the details are given with great precision, we cannot but look upon the announcement as a specimen of what is known across the Atlantic as "tall talk."]—On the 2d of August, Mrs Timothy Bradlee, of Trumbull County, Ohio, gave birth to eight children—three boys and five girls. They are all living, and are healthy, but quite small. Mr Bradlee was married six years ago to Eunice Mowery, who weighed 273 pounds on the day of her marriage. She has given birth to two pairs of twins, and now eight more, making twelve children in six years. Mrs Bradlee was a triplet, her mother and father both being twins, and her grandmother the mother of five pairs of twins.

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